FORMER NEBRASKA ORDNANCE PLANT

RESTORATION ADVISORY BOARD MEETING

HELD IN MEAD, NEBRASKA

DATE: JANUARY 25, 2007

TIME: 7:00 P.M.

Reported by: Susan McKenzie

Videographer: John Thomas

(Whereupon, the following proceedings were

GARTH ANDERSON: Good evening everybody. It's 7:00 o'clock. We will try to get started on time here. If everyone can find a seat, we'll get going. Welcome to the Former Nebraska Ordnance Plant Restoration Advisory Board meeting. I appreciate everyone coming out on -- I think this is probably three or four meetings in a row where we've had some kind of weird weather phenomenon.

So thanks for coming out in the heavy fog. Hopefully you'll find your way home safely without hitting a deer along the way.

I'm Garth Anderson. I am the project manager for the Mead project, Army Corps of Engineers, from Kansas City. Before we get started, I hope everyone was able to sign in at the back table. And there's a multitude of handouts back there to help follow along in the meeting. We have obviously the slides that we'll be briefing from tonight. We got a map, a large map, that will help you follow along as we -- in our discussion. We've got a couple of fact sheets on surface water risk and the Advanced Oxidation Process safety issues that were raised in the last meeting. We've got another handout on operations of maintenance performance and questions and answers from the last meeting.

Some of you may also be interested -- there's a CD copy of the final Containment Evaluation Work Plan for those of you that wish to have that and put it up on your computer. There's also a hard copy in the Mead library. There's also some hard copies and CD copies of the latest data that we'll be talking about tonight. Okay. Agenda tonight, it's fairly standard. We have a few other things that we'll be talking about too. Again, we'll update you on activity since the last RAB meeting, as we usually do, talk about the groundwater monitoring that's been conducted from our September 2006 event. I want to talk a little bit about the Five-Year Review process and some Operable Unit III activities that are upcoming. And then we'll set a date for the next RAB meeting.

Okay. Some quick introductions. The Community Co-Chair, Melissa Konecky, is in the back of the room.

If you can give everybody a wave so everyone knows who you are. Welcome.

Again, I'm Garth Anderson. I'm the project manager and I serve as the RAB co-chair for the Army.

A few Restoration Advisory Board members are here today. At the front table is Scott Marquess from the Environmental Protection Agency, and Larry Angle from NRD.

Let's see. Who am I -- I think that's all the RAB members we have here tonight.

These are our active RAB members.

And, unfortunately there's some that couldn't make it tonight. I don't see John Wageman in the audience.

And Paul Randazzo expressed his regrets for not being able to come tonight.

These are some of our other members -- oh, I'm sorry. I missed one person. Bruce Haley from the University of Nebraska is here tonight as usual. He's always a faithful attendee to all of our RABs.

Meeting guidelines, again, everyone's free to participate in the meeting as we go along.

As always, we try to start and end on time. We got started on time. Let's see how we do at the tail end. It's always a challenge. We're going to try to stick to the agenda as best we can.

I know there's a lot of questions out here. You know, we'll try to answer one question at a time. In the back is Jill Fraley who will be -- so if you have a question, raise your hand high, and she'll bring you the microphone so you can ask your question. And, you know, let's keep it civil and respectful tonight.

Meetings are being recorded. We have our video transcriptionist and a hard copy court reporter transcriptionist. So just a reminder, you are on tape, or DVD as it is, so you'll all be immortal.

When you ask a question, please state your name so that the court reporter can get it down
and get your name into the transcript. And again, one question at a time. Try to state it loudly so that we can get it in there.

Oh, I forgot one thing. There will be a couple of tape changes during the meeting, so at probably about 8:00 o'clock we'll have to stop and change tapes, take a quick break, and then resume the meeting.

Project mailing list, in the back on the sign-in sheet, if you are not already getting letters from me, please put your name on the mailing list so I can add you to the list. And if you'd like to be on my e-mail distribution list, please put your e-mail address down there so that I can send out updates, status updates, links to the website, reports and other things as they become available.

And we don't share this information with anybody, so you don't have to -- you shouldn't have to worry about any privacy issues on that.

We do have a project website. We post our current sampling data out there. Actually we keep a year's worth of data out on the website, and there's other, you know, current maps and other things out there that we try to keep up to date as much as humanly possible.

And we're going to start posting current documents out there as well. And you'll start seeing some of those pop up here, you know, quite soon.

MELISSA KONECKY: Garth?

GARTH ANDERSON: Yes?

MELISSA KONECKY: I'm Melissa Konecky. Garth, I just wanted to bring up the fact that -- or just to kind of tell everybody that this agenda was set without community involvement. And so, you know, we really need to have some input into the agenda each time.

Another thing is that we need the materials like, you know, the DVD in the library and the transcripts and, you know, the PowerPoint display, you know, that's going to be used for the next meeting, we need that before, you know, just a couple of days before the meeting so that we have time to review, at least seven days prior to the meeting. And really, the DVD and the transcript should even be earlier so we can have a chance to review them if possible.

GARTH ANDERSON: I think the DVD and the transcript were a couple weeks later than we hoped this time.

LYNN MOORER: Not true. The DVD didn't arrive until just recently, just a few days ago. You didn't even send out the announcement that it was there until just within the past week.

Its Lynn Moorer speaking, L-Y-N-N, M-O-O-R-E-R.

You know that's not true, Mr. Anderson.

GARTH ANDERSON: Well, I respectfully disagree with that. But I do agree on the agenda.

We do need to continue the discussions earlier, make sure all agenda items are addressed.

LYNN MOORER: Mr. Anderson, it's not fair for you to just sort of try to shove this over to the side. Ms. Konecky, Community Co-Chair of the RAB, has communicated with you consistently in detailed form by letter more than several dozen times over the past two years providing suggestions, requests, various different mechanisms to help assure that the community is able to come to these meetings informed so that they can be able to participate actively in information exchange as RAB guidance sets out the whole purpose of these RAB meetings are for.

And she has asked you numerous times in the past to make sure you get to the RAB and the members of the public who are interested, who have signed up on the mailing list, all the information, the documents, all the key documents that you're going to be discussing

at least a week prior to each meeting. And you have never yet done that. You slip those in one or two days prior to the meeting.

So, for example, this meeting, you only sent that out on Tuesday, Tuesday, two days ago you sent finally the results from the September sampling analysis. That doesn't cut it. That's not seven days ahead of time. Likewise, you just finally sent out also on Tuesday the slides, the PowerPoint slides, to the people who asked to have them. So two days ahead of time is not seven days ahead of time.

This is something that's easily doable, and yet you have continued to shove it over to the side, ignore her specific requests. And I need to make sure that you understand this is unacceptable, and this is also inconsistent with what RAB guidance requires. RAB guidance requires that you coordinate with the Community Co-Chair and that you provide the information and address concerns when raised. And you have consistently failed to do that. And that is unacceptable.

And so we will not stand for your being able to try to revise history and to misrepresent what has actually happened. We have documentation that's wide and deep and long, and I
will be happy to assist Ms. Konecky to challenge you on every single point if you're going to stand here and continue to prevaricate and lie to us about the information you've provided. This site is important to us. All of our lives and our health and our livelihoods are affected by what happens because of the contamination that you have created at this site. And so it is not acceptable for you to try to shove it over to the side and say, ah, it's just a small matter, yeah, well, and just go right ahead and ignore all the specific requests that have been lodged to you.

There are many examples of very specific requests that are set out in black and white in the transcripts.

GARTH ANDERSON: Those will all be addressed tonight.

LYNN MOORER: We expect to have you deliver on every promise that you have made with respect to providing information and dealing with every request that has been raised. That's the whole point of these RAB meetings. These RAB meetings are not PR exercises for you to try to spin and make the Army look good in this very contaminated situation.

GARTH ANDERSON: Well, let's get started.

MELISSA KONECKY: You know, I just wanted to make sure that everybody knows, I mean, we need some time to go through the material in order to be able to participate effectively at these meetings, you know, instead of just coming here and sitting and having it be a one-way, you know, like you guys are feeding us. I mean, we want to be able to participate really effectively. So, you know, in order to do that, I know most of us

are working and busy with all kinds of things, you know. And so we do need to have the materials ahead of time. And not only the DVDs and the agenda and the transcript, but, you know, even the handouts would be great if we could either get them e-mailed or, you know, snail-mailed.

LYNN MOORER: Five to seven days prior to the meeting.

MELISSA KONECKY: Yeah, you know, just to give us to time, you know at least seven days before the meeting.

You know, and I notice too this time I did get my letter about the meeting, you know, my snail-mail letter ahead of time, a couple of days ahead of time. But I mean, there's been lots of times I've gotten my letter, you know, like after the meeting. And I know some people don't necessarily have e-mail. And so, you know, that's important too.

GARTH ANDERSON: I agree.

MELISSA KONECKY: And people need to know. You know, a lot of times we don't get our Wahoo newspaper or Ashland Gazette before the meeting and, you know, they might advertise it or put a little blurb in about it. But, you know, if we don't get it in time -- and one last thing for the moment.

I noticed on slide 31 of the PowerPoint a map was referenced. And, you know, it would sure be convenient as we're going through there if the map could have been included in there too. Along with the reference.

LYNN MOORER: There's no reason why you can reference it in the PowerPoint slides but you can't go ahead and provide a copy of the map in with the materials that you provide seven days prior to the meeting. I mean, that's the whole point, being able to study the map and make it relate to the data that you're listing. There's no reason to continue to handicap the public's ability to be able to participate from an informed posture.

GARTH ANDERSON: That's fair enough. The map that we've handed out tonight with all the handouts has all those reference points on there.

LYNN MOORER: But we receive it tonight for the first time, Mr. Anderson. That's the whole point.

GARTH ANDERSON: And the map from the last RAB did have all those referenced as well. So I agree it could be better packaged. So we'll continue to do that.

MELISSA KONECKY: I just wanted to ask some of the other people here if anyone else had a problem getting to that September sampling that was e-mailed to us. I tried to click on the website and couldn't get it, and then I tried to type it in and I couldn't get it. The page was unavailable for some reason.

GARTH ANDERSON: I checked it out from various computers and it came up just fine. I always test it before I send a note out.

LYNN MOORER: Well, you need to know that some people were not able to get into it. I mean, that's the point here.

GARTH ANDERSON: I understand some of the mysteries of information technology are beyond me, when things work and when things don't. Just to clarify for the record, Brady?

BRADY BIGELOW: Yeah. I just wanted to mention that the -- not the presentation materials from tonight's meeting, but the data summary report, the RAB transcript and the DVD were placed by us personally in the library on January 11th, for the record. That's been in there since Thursday. It's been two weeks exactly as of right now. We placed those -- we didn't send them and wait. We placed them in there ourselves on the shelves, and loaded the material up to the computer. And you can probably also check with -- Vera, when she gets the DVD, will put a sticker on it and the date. So if you want to check with her and verify that, you're welcome to.

LYNN MOORER: Mr. Anderson, why wasn't the DVD put in there contemporaneously with the meeting transcript? Why was it only provided just two weeks ago? You know, the last RAB meeting was three months ago. Why wasn't the DVD available in the library for approximately two months along with the transcript?

GARTH ANDERSON: Good question.

LYNN MOORER: What's the answer?

GARTH ANDERSON: I don't really have a good reason for that. It just took longer this month, or this last quarter.

LYNN MOORER: The DVD has never been in there contemporaneously with the transcript. It should be.

GARTH ANDERSON: Okay.

LYNN MOORER: The transcript is incomplete. We need the DVD to have all the information.

GARTH ANDERSON: Well, I think the transcript is very complete.

LYNN MOORER: It is not complete. You have never -- I assure you, if you were to sit down and review the transcript comparing it to either a tape or a complete videotape of the meeting, it would confirm the fact that there are significant chunks that are omitted from the transcript, perhaps inadvertently. But anyhow, the transcript is not a complete

record of the meeting. So anybody who's interested in the community does need to be able to see the DVD in order to see the complete meeting, to get all the information from the meeting.

BRADY BIGELOW: One other thing I'd like to note too, in addition to the DVDs that we do put in the library, there's also an electronic version on the computer. So if you don't have the mechanism to view that elsewhere, you can look on the computer and find the dates of the RAB and double click and it will actually come up and show you the entire RAB.

LYNN MOORER: Do you have that available on your website?

BRADY BIGELOW: No. Those are huge, huge files. They would never --

LYNN MOORER: Okay. So the point is, unless you're actually sitting in the Mead library, you're not going to be able to access that.

BRADY BIGELOW: Yeah. And I believe the reason that Vera now puts the tag on it is so people can check it out and bring it back. I think that's why she started to put the gold tag on there.

And in the future, if we need more, if we see that people are looking for it and it's not available, we can make extra copies. I'll do whatever I can to make sure you guys have access to it.

LYNN MOORER: Mr. Bigelow, I would like to request then that you make a copy of the DVD and put it -- and provide it to DEQ so it's available in DEQ's file for people who can access it in Lincoln. You said you would make as many copies as you want. Provide a copy to DEQ in addition to providing a copy to the library, and do it contemporaneously when you provide the transcript.

GARTH ANDERSON: We can do that.

LYNN MOORER: Thank you.

GARTH ANDERSON: All right. Let's go ahead and get started.

Some of the things we've done since the last RAB meeting, we've conducted our quarterly
groundwater and surface water sampling as usual.

We've installed most of the expanded monitoring well network, which we'll talk in more detail tonight.

We have continued our evaluation of Load Line 1 extraction and treatment system. We did approve the -- we do have an approved version of the Containment Evaluation Work

Plan. And there may be a couple of CD copies still back there on the table if you did not get one.

We're continuing the development of the construction work plans for our Advanced Oxidation Process pre-treatment system. And one of the questions that was asked -- or several questions that were asked at the last RAB, some of the safety considerations of the Advanced Oxidation Process, chemicals that we'll be using on site, we prepared a fact sheet on that that you can look at and see what all will be going into that design, what some of the safety considerations will be.

We continue to finalize the calibration of the 2006 groundwater model. We had a lot of hydraulic data from the site that we collected in conjunction with NRD that's going to be extremely useful, and we're using that to calibrate our model for this iteration. So that model will be final upon EPA's final review. And we continue to assist our Omaha district in MUD oversight.

MELISSA KONECKY: How are you doing that?

I'm sorry. I'm Melissa Konecky.

How are you assisting the Omaha district with MUD oversight?

GARTH ANDERSON: Right now we're working with Omaha to finalize their monitoring well network and choosing wells to put in, hydraulic data loggers and other data collection means so that the entire monitoring well network system will be ready to go.

MELISSA KONECKY: When?

GARTH ANDERSON: I believe MUD's schedule right now is they're going to be installing a couple more of their monitoring wells in March, and they're purchasing data loggers to put into some of their wells and some of our wells. But they have a plan in now that's being reviewed by us and by EPA.

MELISSA KONECKY: Okay. So --

LYNN MOORER: The question is when do you expect that it will be done?

GARTH ANDERSON: I hope we have something to report at the next RAB.

LYNN MOORER: You hope to report that it's done by the next RAB?

GARTH ANDERSON: That they have an approved monitoring well network plan.

MELISSA KONECKY: Do they have to do that before they start pumping?

GARTH ANDERSON: Have the monitoring well network in?

MELISSA KONECKY: Have everything set? Yeah.

GARTH ANDERSON: I'd have to refer back to the permit specifically. I don't have the answer off the top of my head. But we'll get that answer to you.

LYNN MOORER: Perhaps Mr. Marquess knows.

SCOTT MARQUESS: I don't know off the top. Sorry.

MELISSA KONECKY: Thank you.

GARTH ANDERSON: Okay. What we've got coming up, as I've talked about before, we're going to complete the groundwater model calibration. We've got a few additional monitoring wells that remain to be installed. And again, we'll talk about that in a little more detail.

We have our next quarterly sampling round in March. I might add also that right now we have crews out sampling the newly installed wells as part of our expanded well network. And again, ECC will talk about that in a little bit.

We hope to begin construction of our EW11 Advanced Oxidation Process system in March.

Also we're going to be looking to update our Community Relations Plan. I'll talk about that in more detail in just a little bit.

We touched on it at the last meeting. We'll be conducting our Five-Year Review process up through the spring and through the summer.

And then with Operable Unit 3, we'll talk about that in some more detail, our Ordnance and Explosives Recurring Review, as well as a Soils Removal Action.

LYNN MOORER: Mr. Anderson?

GARTH ANDERSON: Yes?

LYNN MOORER: Perusing what you've got on the PowerPoint presentation, it appears this is the only opportunity to talk about the Advanced Oxidation Process.

GARTH ANDERSON: Okay.

LYNN MOORER: I do note this so-called fact sheet that you have available. Nice color; good layout. I commend the typographer, whoever set this up. The trouble is it doesn't answer the questions that I posed at the last meeting.

The specific question that I posed was what are the chemical hazards associated with mixing hydrogen peroxide and ozone together in order to create a chemical reaction to treat TCE, and asked for specifically detailed information about the nature and types of chemicals you're going to be using and the hazards associated with each one of those and the hazards associated -- so we're talking about hazards of these various different chemicals singly or, you know, prior to combination, and then the hazards associated with combining them in this process.

So this is a lovely fact sheet, but it doesn't answer the questions that were posed.

GARTH ANDERSON: Well, I'm not sure how that doesn't.

Brady, could you help Ms. Moorer out?

LYNN MOORER: Could you point to me in the fact sheet where it answers all those questions then?

It only says that hydrogen peroxide reacts violently with organics and talks about body skin and things like that, but it doesn't talk about the various different types of chemicals, the amounts, the hazards associated with them singly, and then the hazards associated with combining them.

BRADY BIGELOW: The way we tried to break this down -- and you pointed that out a little bit already -- I think we talked a little bit about the individual hazards directly with ozone, directly with hydrogen peroxide, and then we go and talk a little bit about -- and I haven't looked at the reformatted version, but I think we've got -- hold on one second please.

LYNN MOORER: This looks like basic generic materials, data safety sheet type information related to generic hazards associated with ozone and hazards associated with hydrogen peroxide. It doesn't talk about though the types of hazards -- it doesn't tell us how much you're going to have -- remember I asked specific questions about that -- and the hazards associated with combining this and at the various different shall we say quantities.

BRADY BIGELOW: If you look under the section that's called Facility wide Safety, about halfway down through the first paragraph, you'll see it says that, "The Mead AOP plant, the HiPox Process System will have an ozone dosage of 8.9 milligrams per liter." That's where it's talking about -- when it starts talking about HiPox, that's where the hydrogen peroxide and the ozone have been combined together. And that occurs in a reaction chamber.

And I'm not an expert on it. I can give you generalities about how this works. But basically there's only two chemicals we're using in this process, with the exception of if you clean it, you may use some cleaning agents. But we have hydrogen peroxide that

comes in, which is a -- it comes in a liquid form. And we also have ozone which comes in as a gas. And that's really produced by two different instruments. There's an O2 generator, just an oxygen generator, that flows into another reactor that creates ozone. And that all comes together and comes into a reaction vessel which is made out of stainless steel. So when those two come together, it's in a sealed system that's made out of stainless steel. All the reaction that's going to occur occurs in this short time frame in this sealed system. At the end of this, they vent off -- what we vent off is CO2 and oxygen. And it's possible that any unreacted ozone could come out of the groundwater at that point too. That travels up through a separate system into what is referred to as an ozone destruction unit. And at the end of that -- through that process, when it comes out of there, we have another ozone detector that watches for any residual ozone. So if it sees anything that makes it out of the reaction vessel through the destruction system and into that area, it will shut the system down.

And I started to come up and look at a way maybe to put something like that into a fact sheet, and it's very difficult to lay it all out in what they call a PI&D figure. And I'd be more than happy to show more detail once anybody wants to see that. But for this purpose we wanted to talk about the dangers of peroxide by itself, the dangers of ozone by itself, and then what happens when you mix them together, and the concentration that we're mixing them at. And that's what we think -- now, I want to say this, that the numbers you're seeing in there, the concentrations that we're quoting on here are based on some pilot studies we did. And that's -- the concentration is dependent on the TCE concentration coming in. So those could be adjusted a little bit. But generally speaking, that should be what we have.

LYNN MOORER: How do you destroy ozone?

BRADY BIGELOW: Heat does it, is one of the -- and a catalyst.

LYNN MOORER: You talk about your ozone destruction chamber. So that's basically an oven or something?

BRADY BIGELOW: And it has a catalyst in it

And I can get you more information on that if you'd like. But again, on the tail end of that, we have another sensor that's actually linked into the computer that if it does see ozone, for instance, if ozone were to have a potential to be vented to the outside, it shuts the system down, it shuts this system, the HiPox system, down and the well pump. So we're able to shut it off right away.

LYNN MOORER: To what extent has this system been tested?

BRADY BIGELOW: This system is actually in several different locations. We will do extensive testing once it's installed during the shakedown process.

LYNN MOORER: What do you mean by "several different locations"? You mean at different facilities across the country?

BRADY BIGELOW: Yeah, they usually have wastewater facilities. And I think the company has a list of places where they've used -- it's a fairly common -- there's a lot of different companies that do it. This system is a little bit different and it's a little more efficient cost wise in how much of the material you have to use, like the peroxide and how much ozone it uses. But Generally speaking it works like most of the other systems do.

LYNN MOORER: But you said this system is a little bit different. So is there another place, another location that has this exact system that we could look to in terms of what their track record is and what kind of safety or dangerous occurrences they've had?

BRADY BIGELOW: I don't think you'll find the exact system anywhere else, because these are custom made based on what we find when we do the pilot study, but the same technology would exist at other places.

LYNN MOORER: So actually this is the first of this kind?

BRADY BIGELOW: No, no. This is the first --

LYNN MOORER: I mean this particular technology that you're anticipating using?

BRADY BIGELOW: No, the technology would be the same, but the size and the flow rates and things like that would be different. Some places may only be treating fifty gallons a minute; we're looking at 600. Some places may be doing thousands.
They scaled them up for how much water and how much contaminant is coming through.

LYNN MOORER: So what kind of accidents are the things that occur at these types of facilities?

BRADY BIGELOW: The things we'll watch for are hydrogen peroxide leaks, ozone getting into the ambient air. This system also has a mechanism to monitor the ambient air in the room so if ozone were to be getting out, an alarm would go off and the system shuts down. And what it does, there's several places along the pathway that have these alarms. And it will trigger something for the operators first. And if they're working on something, they have the ability to temporarily override it. But for the most part, the pump would shut down in EW11, and the system would shut down, the treatment system, and then they would just wait for somebody to come in and do whatever maintenance is required to get it back on-line.

I've got to say, when you go through the system from start to finish, which I've recently done to look for these interlocks, it's a fairly impressive system in the way that it not only monitors itself that it's working properly, but also monitors the surroundings to make sure that there aren't dangerous for the workers.

LYNN MOORER: Have you operated one of these types of systems before?

BRADY BIGELOW: No, I haven't.

LYNN MOORER: Is there anybody who's going to be in charge of -- or associated with operating this who has any experience doing this before?

BRADY BIGELOW: Here on the site, no. We'll all be learning from the manufacturer how this runs during the shakedown process.

LYNN MOORER: What type of oversight will be associated with this? Like, for example, in the startup phase, are you going to have someone who has experience with this on site for -- let's say for the first week of operation or some such thing to assure that it operates safely?

BRADY BIGELOW: Absolutely.

LYNN MOORER: Do you want to specify what your plans are for having a knowledgeable person, experienced person on site?

BRADY BIGELOW: During the shakedown process we have the subcontractors that are associated with building the building around us, that are constructing the building will be there, as well as the manufacturer of the process itself. And we'll go through what we refer to as a shakedown process where we make sure everything is running correctly. And we also will over a series of days be checking the concentrations for our dosage amounts to make sure that we're not overdosing the system and that we're dosing enough to destroy the TCE that's coming in. So there will be a number of days on site where there will be a lot of people, and ECC people, manufacturing, and the Corps always is there for the entire shakedown series. So there will be a lot of people watching it for the first week to two weeks, and then we will maintain it daily. We have full-time staff that will operate this just like Load Line 1 and the main treatment plant. And also in addition to that, what's called the PLCs, the
computer systems, actually talk to each other, meaning that the main treatment plant will be linked to this treatment facility as well as Load Line 1 as well as all the extraction wells. And all the safety alarms are all tied in together. If a safety alarm were to go off, a call -- if we don't have somebody on site at that moment, the system would shut down and sends out a call to one of our operators, whoever's on duty that night, that something has gone wrong, and then we have the option to come in and see what's wrong and turn it back on. But the system will shut down, plus we'd get a phone call saying something's gone wrong.

LYNN MOORER: So basically the shakedown process is roughly a two-week period?

BRADY BIGELOW: Roughly. It could go longer if we're adjusting dosages.

LYNN MOORER: And is it part of the shakedown process that you test this emergency shutdown system?

BRADY BIGELOW: Oh, sure.

LYNN MOORER: Several times?

BRADY BIGELOW: Absolutely. That's part of the program to get everything talking to each other. We'll go through that several times.

LYNN MOORER: Is there a current document that you can point us to that lays out what the protocol is in the shakedown plan?

BRADY BIGELOW: The work plan -- yeah, the work plan that's in review right now has some of the shakedown protocols.

LYNN MOORER: Can you give me a better title?

BRADY BIGELOW: The AOP --

LYNN MOORER: It's not called just "work plan," is it?

BRADY BIGELOW: AOP Remedial Plan, Work Plan -- we can look up the exact title.

GARTH ANDERSON: As to the specific title, it's the EW11 AOP Work Plan.

LYNN MOORER: So has this been approved?

BRADY BIGELOW: Not yet. It's under review.

LYNN MOORER: And the shakedown is anticipated -- assuming the work plan is approved, when do you anticipate doing the shakedown?

BRADY BIGELOW: I want to say, without looking at the schedule, sometime in August. It might be July. I'm not sure right now.

LYNN MOORER: So where are you with respect to constructing and putting together all the equipment?

BRADY BIGELOW: We're in the final design phase, the final design phase. So we're at 90 percent essentially right now. And that will go through review and we'll see if there's some additional design changes that need to be made. So basically the ground hasn't been broken for the system.

LYNN MOORER: Okay. So you anticipate construction to begin when?

BRADY BIGELOW: Early May is when it looks like we'll break ground.

LYNN MOORER: Okay. I appreciate the extent to which you have entered into a colloquy on this. Please rest assured however that this doesn't answer all the questions. This is more or less an introduction.

Thank you.

GARTH ANDERSON: And we will continue to provide updated fact sheets as we get new information on all of our systems.

SCOTT MARQUESS: Scott Marquess. I just want to -- you had asked about the MUD monitoring network needing to be in place prior to operations. I have a copy of their plan here. And my understanding -- and I don't have the permit with me, but I believe they will have to have their monitoring network in place before they start to operate. I would like to verify that in the permit. But to try and answer your question, I believe it does have to happen in fact before the plant begins to operate.

GARTH ANDERSON: At this time Brady Bigelow will stand up once again and take us through the most recent sampling data.

BRADY BIGELOW: One thing I wanted to point out -- actually Larry Angle pointed this out to me a few minutes ago and I did verify it -- on the summary report, in the back there's a map that shows the monitoring wells we sampled in September. And it will show that -- let me see if I've got this right here. It's going to show 38 --

Help me out, Larry?

LARRY ANGLE: 37 and 46.

BRADY BIGELOW: Okay. Let me find where that is. Okay. 37 is here; 46 is here. The data, it didn't get into the summary tables in the data summary report. We did sample those. Those were non-detect. And I do have a little Excel spreadsheet that I generated to show that. But again, those were both non-detect. For some reason they're not in the data summary report tables in the back. It would be Table M1. We'll get that fixed
and uploaded again and get new copies in the library and upload the new version on the website as well. I apologize.

LYNN MOORER: Would you please send us a notice, the folks who are on the mailing list, and let us know when the updated one is posted?

BRADY BIGELOW: Sure.

LYNN MOORER: Thank you.

BRADY BIGELOW: Again, I apologize for that. Again, this is the GMP portion. We're going to talk about the December GMP. So this is what we sampled last month. We completed everything on December 17th. 24 monitoring wells were sampled, 8 residential water supply wells were sampled, 13 surface water locations. You know, all that's been in the lab. We're starting to get the data in now. We expect the results letters and the quarterly data summary reports to be finalized in early March.

Now we can talk about the September results that we got. The data report, like we just talked about, does have an error in it. We'll get that fixed for you. We're going to talk a little bit in a minute about the trends in some of the surface water and monitoring wells. Most of the wells that are down here along the southern perimeter and those that are around Load Line 1, down here, anything that we did get a positive detection. And we're going to look at a slide and look at the trend a little bit. There were a couple wells, MW10 -- these are clusters. The cluster MW10, the cluster for MW20 and the cluster for MW82 were non-detect, and they have been for a while, so they don't lend themselves very well to a chart.

MELISSA KONECKY: Excuse me. When you say "non-detect," you don't mean that there's no contamination there; right?

BRADY BIGELOW: In this reference I'm referring to RDX and TCE.

MELISSA KONECKY: Okay.

BRADY BIGELOW: But all the data is in the data summary report. And anything that there's a positive detection on would be in Table MW1.

MELISSA KONECKY: I guess what I'm getting at is, there can be concentrations of only
RDX and TCE under the action levels there; right?

BRADY BIGELOW: If there are, yeah, we'd do a trend. The ones that did have detections below the action level I have a chart for those. These are the ones that we had no -- you know, below the detection level.

MELISSA KONECKY: But only on those two chemicals?

BRADY BIGELOW: That's true, yeah. As far as these slides go, I just did trending for RDX and TCE. And the way the data summary report is laid out too, what's referred to as Table MW1 is everything that -- all the constituents we sampled for are all in there. MW2 is a subset. And I'm not -- I don't remember exactly which way it goes. One is any COC. And I think MW3 is any detection. I'd have to look to make
sure. But the second ones are summaries, so it makes it a little easier to look through real quick and see if there was a hit on some of them.

MELISSA KONECKY: Thank you.

BRADY BIGELOW: Okay. So this is --

the RDX at surface water location SW06, which is right here, this one is right up here. We looked at this one last time. We have the new data point. You can see it bounces around a little bit. Surface water is a tough one to track because it could be rain; some other things can influence this. But no significant rise or drop in that. Of course, from the March event, there is a significant drop. But again, this could be due to additional water flow.

This is the TCE at that same location, SW06. And again, about the same result that we saw with the RDX. RDX and surface water location SW08, which is right here, right in the heart of this part of the plume --

NANCY GAARDER: This surface water, is this a creek or what?

BRADY BIGELOW: Yes.

THE VIDEOGRAPHER: We need your name.

NANCY GAARDER: Nancy Gaarder, Omaha World Herald.

BRADY BIGELOW: That's correct. These samples that we've been talking about over here are Johnson Creek, and we have one that's out on Clear Creek. So yes, those are all surface water creek samples. This is -- the one just south there in the middle of the plume, this is for the RDX concentration. The last time Ms. Moorer brought up a good point that sometimes we take a duplicate from a location. And typically in the past what I would do is whatever the original sample was we would put on here and not necessarily look at the field duplicate.

We would use that as a QC. But I think it was a point well taken. And what we've done now is when we do have two results, an original sample and a field duplicate, we're going to actually show the highest of the two. And if you look right at the top of that column, you'll see there's two numbers, so it will tell you the difference between the two. And that could be important. So here, for instance, the main sample was 6.6 and the duplicate was 6.44, and this bar represents the highest of those two. That's -- you know, I think it's better to err on the higher side.

LYNN MOORER: Are you going to tell us now why you think there's such a large increase, why the RDX shot up since the last sampling?

BRADY BIGELOW: There could be a lot of reasons for that. This one -- I can tell you what was different about this event than the others. I guess I could do that. This was really the first event that occurred immediately following a large rain event. You know, before this, we hadn't had an opportunity because of the drought to really get -- most of

the time it had been dry for a while. This was the first time that was basically the day following a big rain event.

LYNN MOORER: Do you think that explains it?

BRADY BIGELOW: I wouldn't speculate. Surface water is so difficult because the actual speed of the water in the -- the amount of water coming through the creek bed itself is probably the biggest factor I would think.

LYNN MOORER: Does that lead you all to consider whether you need to add some other surface water sampling locations in that vicinity? I mean, because of that significant increase, are you now of the mind to just write it off to saying it was a rain event or are you also going to look a little further and say, well, maybe we should have a few more sampling locations in that vicinity or some other appropriate --

GARTH ANDERSON: Well, there's a lot of factors we would look at.

GARTH ANDERSON: We would obviously want to see what happened in the next event, see if that was just a one-time event or if it's a trend. If it remains high, then yeah, we may consider taking some additional samples or taking other measures. But yeah, we'll see what happened in our December event, see if that's a repeated level.

LYNN MOORER: How many times does it have to repeat before you're going to modify your plan?

GARTH ANDERSON: Well, as Brady said, surface water, there's a lot of factors that can
influence what the levels are, the level in the creek at the time, sometimes in the winter you have to actually chip through ice to get a surface water sample. There's a lot of variables that go into this.

LYNN MOORER: So that doesn't actually answer the question.

GARTH ANDERSON: I don't have a specific answer for that question.

SCOTT MARQUESS: Can I try and address it?

Regarding, you know, needing to do more sampling, I think at downstream location No. 10, which is the one immediately down of 8, I think the RDX is -- I can't remember if it's less -- you guys got the data there. So it's about the same, 1 to 2, at 10. So, you know, you're kind of -- really there's more of a TCE thing happening there than an RDX thing. But that's -- both of those are -- that location is where those plumes tend to look to be discharging groundwater to surface water. So, you know, over time as the plumes move that way, we might expect to see some results like that. The TCE this time actually decreased from 40 or 50 down to 12 or 10, so -- but again, having it bounded is important.

Now, the TCE at 10 went up. So they're going to go over that data here. But it's important to kind of have those bounds defined, which is, you know, one of the things that we want to look at in terms of is there a need for additional sampling.

DAVID BARGEN: David Bargen, Assistant State Attorney for the City of Ashland. Are there no ways to control for those factors you're talking about? I mean, are these tests useful if we can control for these things, or does it just take more time to decide there's a trend there?

GARTH ANDERSON: Well, most of our -- well, you can see the kind of trend we have going on here. But then it's been holding fairly steady over the past few years. And this is, you know, a fairly significant spike. We'll see what happened the next time, see if that holds true or if it goes back down to its typical levels.

DAVID BARGEN: So the trend is the only way to really see if something is going on there?

GARTH ANDERSON: Yes.

DAVID BARGEN: Okay.

GARTH ANDERSON: For those of you that did not grab one, make sure you grab a -- we have another fact sheet on surface water, the risks associated with some of the levels we're finding in surface water. So that's something that you can take home with you and look at and hopefully it will explain some of our assessment of the risks in the surface water thus far. I hope it's clear that -- so if you compare it to the data that you see in the next few reports, you'll be able to understand what's going on there.

NANCY GAARDER: Nancy Gaarder, Omaha World Herald.

Could you just as a point of clarity, as you go through these slides and you have surface water, can you stipulate which creek you're talking about? Is this Johnson Creek?

BRADY BIGELOW: Yes, all of these up over here are Johnson Creek.

NANCY GAARDER: And then we're talking concentration; correct? It's not quantity, it's -- the concentration is 6.6 to 7.63?

BRADY BIGELOW: Yes, concentration. Right.

BRADY BIGELOW: We've talked about this in the past. This is the anomalous result. We had up in Clearcreek. This is SW11. SW11, again, that's on Clear Creek. And this is right down here (indicating). A year and a half maybe --

GARTH ANDERSON: December of '04.

BRADY BIGELOW: December of '04 we did get a hit -- an unusual hit of TCE out there of 12. And we've continued to sample that over and over again because we were a little surprised by that. And you can see since that time we've not found any even low levels of TCE out there. Again, we keep sampling it. And I wanted to show that this trend of non-detect continues.

This is the Artesian -- what we call an Artesian well. I don't know if that's the correct Term for it. But it's an area where the water comes to the surface. This is the RDX for that location. Again, we've sampled it a lot. You can kind of tell by this graph. The last time we sampled it, of course, was in September of this year with a level of 4.08, a fairly steady increase. And we continue to sample that. Sometimes it isn't flowing, so we sample it whenever we can. Same location. This is the Artesian well. Let me point it out, the Artesian well is this location right here (indicating). It's right down on the corner. You can see it falls right at the tip of the combined RDX and TCE plume.

Again, this is TCE. We do see somewhat of a correlation to some degree between when we can sample one of the -- I think it's SW -- Dave correct me if I'm wrong -- SW6, if that one's dry, usually the Artesian well is dry; is that correct?

DAVID DANDER: That's common.

BRADY BIGELOW: Relatively, yeah. I'm not saying there's a link between two, but we did typically see the same kind of flows out of these.

And again, you'll see a pretty good spike here, and it's a pretty steady climb I would say.

LYNN MOORER: Talk about that.

BRADY BIGELOW: Talk about the trend?

LYNN MOORER: Yeah, tell us why you think we're seeing that climb. Is the Artesian well, for example, affected by rain events?

BRADY BIGELOW: That's a tough one. Lisa, what do you think about -- it seems like it is connected in some way. But it's -- we do see increased flow when we've had rain. And it wasn't flowing in the spring, but we did get some flow once we had the rain event.

LISA THOLL: Lisa Tholl with URS. I would probably just say that the plume is moving and the concentrations are just increasing in that area, which is what we would expect to see.

NANCY GAARDER: So as the plume moves and its concentration increases, do you have any sense of the concentration within the plume itself? Are areas of much greater

intensity coming down or is this the area of greatest intensity? Do you understand my question? Would you expect to see dramatically larger increases in the future as maybe a higher spot comes down?

THE VIDEOGRAPHER: Ma'am, your name again?

NANCY GAARDER: Nancy Gaarder, Omaha World Herald.

LISA THOLL: Lisa Tholl with URS. Yeah, there are higher concentrations within that eastern side plume. And yeah, there are locations that we would expect to see. As the plume moves to the southeast, concentrations get higher.

LYNN MOORER: Mr. Marquess, if, if, are you concerned -- is EPA concerned that there may be some hot spots, some DNAPLs, in the Load Line 4 area, you know, in this far eastern plume?

SCOTT MARQUESS: Well, I think we've shown some of the data in the past that was collected as part of the fall of '05 and spring of '06 sampling
event that shows, you know -- there's a channel of high concentration material --

Garth, I don't know if you want to point out kind of where that runs. And it's been pretty well defined. I think we call it the dissolved phase plume. There might be a DNAPL part that would likely end up more towards the northern end or the source end of the plume if there is any. But you can kind of point -- there's a -- yeah, it's right along there. And
that's kind of in the thousand part per billion range. And it kind of ends up at surface water location 8 where the groundwater surface level discharge will likely be occurring and where the high concentrations of TCE and groundwater are found. And
so the notion is that in the Sector 4 Remedial Action, the focused extraction, whatever we're going to do, we're going to attack the high concentration zone. That would be the plan.

LYNN MOORER: I'll save my follow-up question for when we move over farther. Thank you.

BRADY BIGELOW: This slide is for monitoring well cluster 79. And that is south of County Road F, south of the extraction well Load Line 1 treatment system, almost directly south of EW12. And we've been seeing a pretty steady decrease as far as trends go. We really didn't see anything in the intermediate zone. Everything you had been seeing previously had been in the shallow zone. We started out -- the first sampling event in that monitoring well was at 3.3. This blue line right here indicates the point where we turned on the treatment facility down there and turned on EW12. And since that time we've started to drop down. Our last results -- we did do a sample and a duplicate on that. Our results were 0.57 and the duplicate was 0.54. So a pretty good decrease in concentrations there. Again, that's a well that monitors the effectiveness of the Load Line 1 treatment facility.

And also with the next well, which will be -- monitoring well cluster 80 is in that same general area. It actually sits right on Silver Creek. And we've had higher concentrations there. It really would be right in the middle of that part of the plume. As you can see, we have two depths down there that we've been getting detections in, the intermediate and the shallow. And you can see we were seeing an increase. After we put the well in, we started to see an increase. At the point where we turned on Load Line 1, we immediately started to see a decrease in the intermediate zone, which would be the more transmissive zone, the water would move easier through that zone. And then following that we were starting to see a decrease in the shallow zone too. And you can see where we were at 17.5, we're down to 3.11.

GARTH ANDERSON : Okay. We need to do a tape change real quick. So everyone take a five-minute, grab some more coffee and water, and we'll pick up right here when we start up.

(8:05 p.m. - Recess taken)

(At 8:15 p.m., with all parties present as before, the following proceedings were had, to wit:)

BRADY BIGELOW: Okay. You are probably getting tired of listening to me but we have a few more slides to talk about. Again, this is monitoring well 80. It's the one that's directly south of the Load Line 1 treatment plant. What I was talking about is we have seen a decrease in the intermediate, and we're started to show signs of a trend. It's a little difficult to call this a trend at this point, but it's starting. By next time we'll be able to tell a little more. We do have some preliminary data that we haven't validated yet that is good news. We'll have all that data plotted out for the next RAB.

Any questions on this?

This is monitoring well cluster 83. And 83 is located right here. It's above County Road F, just south of what would be the Load Line 2 RDX plume. No big trends to talk about here. Everything has been -- this one's kind of deceiving. These are all non-detect. We had a different lab then, and the new lab, of course, you can tell has a much lower detection limit. But in general, we haven't seen a whole lot of change across here as far as trends go. This is monitoring well cluster 84. 84 is right here (indicating) along -- I guess that's route 66 now, 66, used to be 63. And this is the RDX concentrations. These are all non-detects, the lower ones here. We do see hits down in the .5 to .4 range and have stayed fairly steady over the last year to year and a half. I should have pointed this out
earlier. I'm sorry about this. The red line that you see going across here -- this is an RDX slide -- the red line represents the action level. And TCE, the same way. It will be on there.

This is 85. This is the 85B result that we had when we first put the well in. We've got

this strange hit up around 10. We did an investigation -- URS did an investigation in the area. It didn't really support this. We were surprised by this. And we've continued to resample it since that point. And as you can see across here, no trend up and no real trend down. It's been fairly stable since that point.

LYNN MOORER: I want to talk about -- I would like to talk about monitoring well 90. Could you be so kind as to show where it is on the map over there?

BRADY BIGELOW: Sure. Monitoring well 90 is above our extraction system right here
(indicating).

LYNN MOORER: Okay. I did -- in the very short amount of time available to review the actual sampling results, I noted the results on 90. And I was surprised that you didn't have a chart, a trend chart for us. You all may recall at the last RAB meeting, Paul Randazzo asked about this specifically. This is on page ten and 11 of the transcript. And let me refresh your memory that the chart that we had at the last meeting was this one (indicating) in which he noted -- we all noted the suddenly high -- or quite high finding for the June results. And so he asked about that, and he asked whether or not that was an anomaly or what the situation was.

And you, Mr. Bigelow, responded that, yes, you agreed that it looked a little unusual. And you said, "I think if we see a significant jump up again, that may change a little bit of what we look at down there and what we do."

And so I need to draw your all's attention to the fact this it jumped up even much more this last time. And I'm surprised that you don't have a trending chart on it. So last time at the shallow depth, it was fifty -- this for TCE -- it was 52; in September it was 87.7. Okay. So it jumped from 52 to 87.7. And previously -- the previous months we're talking about all being in the teens. Okay. So now it's from the teens up to 87.7 at the shallow depth. At the intermediate depth, last time it was 22.7; in September it's now jumped up to 31.3, and at the deep depth in June results 13.5, and this last time, September, it was 16.7. So that it a significant jump.

BRADY BIGELOW: Yes.

LYNN MOORER: All right. Why didn't you show that to us, number one? Why didn't you have that as among your trend analyses that you were going to bring to our attention?

BRADY BIGELOW: What we tried to do --

GARTH ANDERSON: We have that now.

BRADY BIGELOW: Yeah, we have that now. But in general, what I was trying to do is

trend the southern wells. On these bigger events like the March event and the September event we do a lot of wells throughout the site. And the ones that up in the plume or above our extraction system, we didn't trend those. Well, actually we do have the data available. We could look at it right now. But generally --

LYNN MOORER: Let's talk about 90. That's a significant jump. And last time you told Paul Randazzo that you thought that that was essentially an anomaly, that you were going to keep your eyes on it. Now are you so convinced that's just an anomaly? This is now much higher than it was. And this is not just at the end of the plume, this is, you know, quite a ways up there.

BRADY BIGELOW: Right. And we did exactly what we talked about. We wanted to resample it and see if we could reproduce this. And we did and then some. And because that's upgradient and it's within our capture, this is good news. We've done what we installed Load Line 1 to do, and that is to extract TCE from the Load Line 1 plume and bring it into our system for treatment. So this is actually a good thing. We're demonstrating that yes, we are able to pull this down. And this is directly -- again, let me show you where this is. I wish I had a blowup of this.

All right. Our extraction facility is right here and EW12 is right here. This is MW90, which is directly upgradient. And this is what we would expect. These wells were installed here not to look for whether or not we were in containment. These wells were put here to tell us this information, do we have TCE coming in; if so, how much. If we saw something that we thought our system couldn't handle, we had time to react to it. And it will take a little while to get back to the treatment plant, but this is exactly what it's designed to do, exactly what we expected.

LYNN MOORER: Then Mr. Bigelow, I don't understand why at the last meeting you told Mr. Randazzo that it was somewhat unusual to see a big jump in the TCE levels.

BRADY BIGELOW: I wasn't expecting it to work that well that fast. Literally, I wasn't expecting to see that kind of concentration coming in. But again, you know, when you see these kind of results, when you're looking at trends and you see something that's significantly different, you look again. And when you look again, if you're back down here, then you establish that possibly this is an anomaly. You might not know yet. You may have to do another sampling event. But when we get this, we sort of verified what we were seeing. Again, it's not a bad thing. This is above our extraction system, and this is what we expected to see.

LYNN MOORER: All right. So you're telling us this is a good thing?

BRADY BIGELOW: That we're capturing the TCE at the Load Line 1 treatment facility, absolutely.

SCOTT MARQUESS: It's kind of like water runs down hill, TCE is going to go south.

The center mass, if you put one dot in each plume, they're going to be over time moving south.

BRADY BIGELOW: Also, keep in mind that these aren't the only wells we've got. We've got 91 and 89 up here, and then we flank it with 93, 92, 79, 80, 81. So we've got a pretty good density of wells down here. So yes, we know it's where we thought it was, and we know that concentrations are increasing like we hoped it would. And that's why the extraction well is down here. And we also have these wells that are along the perimeter to verify that it's not going in another direction.

So yes, you know, as we see increasing concentrations here, and the URS design of this system showed that we would, we would expect to see results like this, especially in the shallow and intermediate zones where the water is moving fairly quickly.

LYNN MOORER: Mr. Marquess, could you summarize for us what the results are so far from the testing that Dow and General Dynamics have been doing around Load Line 1?

SCOTT MARQUESS: I really would prefer to do that after we get done with the RAB agenda, but I'd be happy to talk about that.

LYNN MOORER: Okay. I was just thinking it might be appropriate since we were talking about concentrations of Load line 1. But however you want to do it.

SCOTT MARQUESS: The short answer is their data is in the northern half of the plume, and they have some detections as high as 15 to 20 parts per million of TCE in the center of the plume --

LYNN MOORER: Wow.

SCOTT MARQUESS: -- which is consistent with what had been detected by the Corps and the supplemental OU2 groundwater investigation.

The Dow sampling is just on a much tighter grid space to make sure we weren't missing something in that same area. So I can kind of give you that data at the end if that's okay.

LYNN MOORER: Right. I appreciate that. And point to us so that we have a clear view of where it is on the map.

SCOTT MARQUESS: I'll be happy to do that.

LYNN MOORER: Thank you.

MELISSA KONECKY: Excuse me. I'm Melissa Konecky.

While we were talking about the TCE over there, do you know what percentage approximately of water that's moving past extraction wells like 12 and 13 is actually being captured and cleaned?

BRADY BIGELOW: The volume of water?

MELISSA KONECKY: Yeah. Well, the percentage, approximately. I mean, is a lot of the contamination escaping through the --

BRADY BIGELOW: Oh, again -- good question. I think that the way these monitoring wells are laid out are to do just that. You know, we've got 91 and 93 that are to the east and are to watch for that, for any of the contaminants that may get away from us. These monitor for that. Also we have 81 that's south of County Road F that is directly east of monitoring well 80. And then on the other side of where we believe the plume is down here we have 79. And that well is also, as we looked at earlier, decreasing in concentration. And then over here, right along County Road F, we have monitoring well 92. Again, we kind of formed a horseshoe shape around that part. So if we start to see concentrations out here, then we'd need to look at whether or not we've got other issues going on. But for the most part, this is pretty well defined.

Actually, this area right here and maybe this area (indicating) are probably the two closest watched areas as far as well density.

MELISSA KONECKY: But as far as contamination escaping through, I mean --

BRADY BIGELOW: Yes, that's what monitoring well 80, 79 and 81 are designed to do. And you're right, there was some plume down there when we started. When we first put those wells in, we did those concentrations that were up in the 17 and 18 range. And those are the ones that are now down in the -- you know, they're starting to pull back and come down a little bit so that it looks like our influence from these extraction wells extend down to approximately Silver Creek right here.

MELISSA KONECKY: So would you say that like a hundred percent of the water that's going through there is being captured and cleaned?

BRADY BIGELOW: Well, the water doesn't just come in from this way. When you pump an extraction well, it forms a depression. So really there's water coming in from the north, but also the water, some of it's from the south. And it's not a perfect circle. So the water that's coming down through here in the -- in what they call the zone of influence is being pulled in. I'm not sure how to answer --

LYNN MOORER: Maybe I can rephrase the question. Mr. Bigelow.

Would it be fair to say that all of the water that has contamination in it in that

vicinity is being pulled in to be handled by one of the extraction wells or the treatment plant? So you may get in some uncontaminated water along with it, but the point is, is all of it that is a matter of concern a hundred percent being channeled in to be captured?

GARTH ANDERSON: This is Garth Anderson. I think your question is are the extraction wells capturing the entire plume on that side. Is that a simpler way of asking?

MELISSA KONECKY: Yeah, if you could answer that.

GARTH ANDERSON: Well, it seems like it is right now. But we still are in a period of evaluating through a 12-month period through our monitoring wells, our observation wells, modeling, and the whole evaluation of the system to make sure that we are achieving full capture and containment of the plume.

MELISSA KONECKY: And so that 12-month evaluation period is -- where are we right now?

BRADY BIGELOW: We started up on February 13th of last year. We're almost there. Our March event will complete that 12-month cycle.

MELISSA KONECKY: Okay. So how does it look so far?

GARTH ANDERSON: Good. So far the data is promising.

LYNN MOORER: So far, what percentage of the water that is contaminated is being captured as planned?

GARTH ANDERSON: Well, until we do the complete evaluation, I can't say with a hundred percent certainty how much is being captured. But once we have collected the last bit of the data for the 12-month evaluation period, then we'll be able to say definitively what that amount is, whether we're achieving full capture of the plume?

MELISSA KONECKY: So by the next RAB?

GARTH ANDERSON: The next RAB meeting is cutting it close because we won't have collected all of our data by then and done a full analysis of it, but we'll complete a 12-month period. And we also have a document that will come out called a Remedial Action Operation Report that describes all those things that I've been talking about, how well the system is actually functioning, is it functioning as designed and doing the things it's supposed to do.

MELISSA KONECKY: Okay. So probably not April but maybe July?

GARTH ANDERSON: Yes. I'll go back and look at the schedule just to make sure I give you an accurate answer. So somebody remind me to fill that in before the end of the RAB meeting.

We have someone looking at the schedule right now. But it's going to go to EPA first so they bless off on what's happening there. I'll give you the actual date of when that report will be disseminated.

MELISSA KONECKY: I just wanted to say, this is a little bit off topic, but before I forget, if anybody has come in here late, I put a whole bunch of handouts on the table that deal with the effects of the TCE and RDX on people, because I thought, well, really that's why -- that's what the fuss is all about and that's why we're here. So anybody feel free to take any of those handouts that I brought.

BRADY BIGELOW: Okay. The status update, again, the GMP documents related to the sampling since the last RAB, we have the September 2006 summary report that we talked about earlier and a series of quality control summary reports that we also placed in the library and put on the computer. So there's a quality control summary report for water supply wells, monitoring wells and surface water there as well.

And also the draft 2007 GMP plan has been submitted for regulated review. And that's the plan that we pick the wells that we want to sample for the following year on a quarter-by-quarter basis. And right now are the regulators are looking at that.

And we're going to talk now about the expanded monitoring well network. I'm going to let Dave Dander take over from here, and he'll run you through what we've installed and where they've been installed. And thanks.

DAVID DANDER: I've David Dander with ECC. I implemented much of the expanded monitoring network installations with our subcontractors and drillers.

LYNN MOORER: I apologize, Mr. Dander. I just remembered a question I was going to ask Mr. Bigelow before we got through with all the business on the monitoring wells.

I notice that the introduction of your report says that there were some problems associated
with four of the wells. You say, "Four locations" -- these are the water supply wells -- "water supply well location 63, 64, 80, 81, were resampled due to data quality issues, and results are pending."

So what were the problems? And two of those, 63 and 64, are in the middle of the eastern plume there. What were those data quality problems? And do you have the results on those?

BRADY BIGELOW: Those were --

DAVID DANDER: 63, 64, and what were the other two?

BRADY BIGELOW: 80 and 81.

LYNN MOORER: 80 and 81. These are water supply wells.

BRADY BIGELOW: Yeah, those are water supply wells --

DAVID DANDER: 80 and 81.

BRADY BIGELOW: If I remember correctly, those four samples were sampled out of hold time by the laboratory, meaning the laboratory has a certain amount of time to get to the sample and analyze. And because some of these compounds can breakdown, the quality of the data, we would lose concentration. So once we saw that they were analyzed out of hold time, then we went out and resampled those. And I don't think we've got those results back yet. But those were -- the only thing, they analyzed them, and then like I said, they recorded them, but they were out of hold time. And we check all that kind of -- the hold times and the other QC associated with samples every time we validate the data. So the nice thing about the way we work now is that as soon as we see a data problem, if it's in somebody's monitoring well or surface water or water supply well in particular, we can go right back out and get the samples into the laboratory and try to get those results out as soon as possible. But as far as I know, I think all four of them were hold time issues.

LYNN MOORER: So hold time is roughly a matter of days or what, hours?

BRADY BIGELOW: It depends on the analysis. For metals it's a year. For volatiles, I think that's a 14-day hold time. And once you extract explosives, it's much longer, I want to say six months, but don't quote me on that. I'm not sure. But with the volatiles, you know, it's sitting in the refrigerator. And past that time there's a possibility that you could lose some of those volatile compounds. So you could still run it, you could still get a result, but you really can't trust it, so we try to get those back out right away.

Does that answer the question?

DAVID DANDER: Again, David Dander with ECC. And I was going to talk about the expanded monitoring well network installations we did for winter and fall.

The expanded well network consists of observation wells -- oh, actually before this, I'll be referring to the map here as well as the handouts, which is the same one you guys got out there. And when I talk about observation wells, it was a little too cluttered to put them on these maps, so there's a separate map in the back referring to the new observation wells I'm going to talk about.

The new wells installed included observation wells, indicated with OW designations, southern perimeter monitoring wells along the south of the site, and the eastern perimeter monitoring wells, both indicated with MWs. And we're currently sampling the new monitoring wells there is baseline sampling this week and next.

Expanded well network for observation wells, 30 new observation wells were planned. 25 of them were installed. And I'll talk about which ones were in a moment. These measured performance of extraction wells. There's 59 observation wells already in place at the site other than the new ones we just put in. The new observation wells were installed around the extraction wells not previously instrumented with observation wells. And most of these new observation wells are on university property.

LYNN MOORER: Mr. Dander, I think there's enough new people here that it might be useful for you to differentiate between what an observation well is as opposed to a monitoring well.

DAVID DANDER: Okay. An observation well, as I think I just indicated, was to measure performance of extraction wells. They're essentially constructed in the vicinity of the extractions wells, they're screened in the same depth zone that the extraction well is withdrawing the water from, and typically they range from 60 to 600 feet. Some areas are higher, other areas they may have a little bit farther than that. And there are typically maybe five or six around each extraction well.

BRADY BIGELOW: Let me jump in for a second.

The monitoring wells are where we collect chemical data and -- chemical data really, and water levels. The observation wells, like Dave was saying, are located around the extraction wells and are primarily are used to look at the surface water -- I'm sorry -- the surface of the groundwater, so the depth of the groundwater. So we don't typically do chemical analysis on that. It's just to monitor how much drawdown is occurring. The extraction well pulls down the water; the observation well is around it to tell how deep it's pulling down.

DAVID DANDER: And actually this next slide here indicates, as Brady said, the monitoring wells. They monitor plume containment in a southerly direction. And right now I'm looking at the southern perimeter monitoring wells. 36 of those monitoring wells were planned; 35 of those were installed. 35 additional -- or older monitoring wells were already in place along the southern perimeter. And again, these are going to be quarterly sampled for the first year. After that they'll be reviewed and sampled -- reviewed on an annual basis and sampled semi-annually or quarterly, or whatever is deemed appropriate.

The eastern perimeter monitoring wells included 48 new monitoring wells were planned; 35 of those were installed. These again monitor the plume containment in the easterly direction. 30 monitoring wells are already in place along the eastern perimeter. Again, they're quarterly sampled for the first year on these monitoring wells, and after that they'll be reviewed.

The upcoming work consists of the remaining monitoring wells to be installed. There's four clusters along the -- yeah, four clusters along the eastern boundary that did not get installed at this time. Those were due to either property access issues or technical issues.

Resolution is in progress on those. And once resolution is reached, the Corps will remobilize and install these wells.

LYNN MOORER: Mr. Dander, Lynn Moorer again. What types of technical issues did you encounter? Can you give us an idea of what the problems were?

BRADY BIGELOW: Yeah. These -- here we have -- we haven't gained access yet, but, you know, we're working on that, and we're going to remobilize sometime this spring. So these two we're working on access. These two here --

LYNN MOORER: Mr. Bigelow, could you -- when you say "these two," give us umbers or something so we have a point of reference.

BRADY BIGELOW: Good point. Sorry about that.

Monitoring well cluster -- proposed monitoring well cluster MW111 and monitoring well cluster -- proposed cluster 109, we haven't got the access yet to put them in. And again, we've been putting these -- all the other ones in over the last couple of months, so it's been a pretty steady run. We probably needed a break for weather anyway right now. But these other ones, we plan on getting access to these and putting them in later.

These here, there are locations --

LYNN MOORER: Could you give numbers, please?

BRADY BIGELOW: 104 and 105, monitoring well cluster 104 and 105. We're working and looking -- the university is possibly putting wells in this area,
and we want to make sure that ours complement any others that go into the area. And we're also working with one of the landowners in this area to come up with a suitable location for that well.

And again, we're hoping to get back out in the March/April time frame once the weather clears up. The ideal time for us to go back out is before crops get put in. So I guess late March, early April, in this area, you know. But again, the orange wells that you see on the maps that you have on here are all the well clusters that we were able to get installed. So pretty much everything down through and up through here with the exception of these four locations are in and we're finishing up some of the surface completions, but for the most part they're ready to go.

LYNN MOORER: So to make sure that we've got this right then, the ones you were not able to put in were 104, 105, 109 and 111?

BRADY BIGELOW: That's correct.

LYNN MOORER: Okay. Thank you.

DAVID DANDER: Most monitoring well clusters consist of three wells, a shallow, an intermediate and a deep. There were two cluster locations where when we logged the deep interval in our test hole, we found that it was continuous shale, which is not indicative of flow, or they would have been dry wells, so they were not -- two deep wells were then installed at other locations.

GARTH ANDERSON: Okay. If there are no other questions on the expanded well monitoring network, we'll go ahead and launch into the Five-Year Review.

We touched on the Five-Year Review at previous meetings. And again, just a little bit more discussion on that. Again, the purpose of the Five-Year Review is the law requires us any time there's a remedy that leaves any contamination in place, we have to go back and evaluate the remedy every five years to make sure that it -- is it functioning as intending, is it doing what it's supposed to do in accordance with the ROD, are all the assumptions when we put this into place still valid, exposure assumptions, you know, land use, and things that may have changed over the last five years that may affect the remedy, or are there other new pathways that may have arisen since the remedy was implemented. And again any new information -- you know, things change out in this big area that we may or may not be aware of, so we like to find out if there are changes in land use or other information that may not be readily apparent by our normal activity. So we go through a deliberate process to collect that information and to assess the remedy. And that process -- the review period for us is between February of '02 and February of '07.

Question?

LYNN MOORER: I'm assuming that now is the appropriate time to talk a little bit about risk and exposure.

GARTH ANDERSON: Okay.

LYNN MOORER: I couldn't find any more appropriate place.

GARTH ANDERSON: Okay.

LYNN MOORER: At the last meeting we were provided from EPA their -- something like a four-page memo that talked about how they came up with the analysis of the risk factor for TCE and surface water.

GARTH ANDERSON: Yes.

LYNN MOORER: And we asked -- I asked specifically whether the Army would provide its memo that showed its calculations and assumptions which generated a different risk factor number. And you specifically promised that you would provide that, Mr. Anderson. And in fact on page 20 of the transcript, line 593 and 594, you said, "We can certainly provide that in short order once we make sure the right things are in there."

GARTH ANDERSON: Right. That's --

LYNN MOORER: Okay. Where is that memo, please?

GARTH ANDERSON: Did you pick up the fact sheet in the back?

LYNN MOORER: That's not a memo. The fact sheet is a PR thing. This does not cover equivalent territory. This does not provide the detailed information as to what sorts of dosages, what sizes of persons that you are assuming. This is not a technical memo. This is a PR thing. I'm asking for the Army's technical memo that's equivalent to EPA's technical memo.

GARTH ANDERSON: Well, we provided the fact sheet in what we hoped to be easy-to-understand terms for the public.

LYNN MOORER: Mr. Anderson, I specifically asked you for the Army's memo, and you
specifically promised it.

GARTH ANDERSON: This is what we had in mind when we were providing information about how we calculated the risk in surface water.

We do have another technical volume, if you will, the Operable Unit 3 Baseline Risk Assessment that goes into extreme detail on how the risk was calculated in surface water.

LYNN MOORER: Mr. Anderson, are you telling us that you used this fact sheet to arrive at your risk factor calculation?

GARTH ANDERSON: That is a summary of how we arrived at our risk calculations, yes.

LYNN MOORER: I don't mind having a summary, but I want to have the original document. I mean, I wanted to see the technical memo. I'm not satisfied with the PR thing.

SCOTT MARQUESS: Can I interject? Scott Marquess, EPA.

The EPA memo that we handed out April of '06 has a summary of what EPA did and then what was in the Baseline Risk Assessment which Garth referenced. So I think all those factors are listed in that memo. And then beyond that, I think the place to look as far as the Army's determination would have been in the OU3 Risk Assessment.

Is that right, Garth?

GARTH ANDERSON: Yes.

LYNN MOORER: Can you please provide it as promised, Mr. Anderson? You said yes, you can easily do that. And I don't understand why you're dodging on this and trying to backpedal on it.

GARTH ANDERSON: I'm not dodging the question. I thought that met the mark. But if you feel that's inadequate, then we can certainly provide a much more detailed calculation of how we arrived at our risk numbers.

LYNN MOORER: Mr. Anderson, please rest assured that we certainly know the difference between PR and actual technical data. Okay? We want to see the technical memo. We're not satisfied with the PR spin.

GARTH ANDERSON: Very well.

LYNN MOORER: All right. And the next thing I wanted to raise here is there was a question raised at the last meeting about what specific cancers are associated with exposure to either TCE or RDX.

GARTH ANDERSON: Yes.

LYNN MOORER: And you said -- Mr. Marquess said he didn't know. And Mr. Anderson said, "We look forward to an opportunity to explain this in greater detail."

GARTH ANDERSON: Bear with me. In the questions and answers we extracted from the last meeting, we had a fairly detailed description of the specific cancers that are associated with TCE and RDX.

LYNN MOORER: I wanted to share with the folks that I have run across an EPA draft report dated August 2001. So this is not a final report. But this is a draft report that talks about health risks for TCE. And it says in here among other things that -- and I think this is fairly important information -- it says, quote, "TCE exposure is associated with several adverse health effects including neurotoxicity, immunotoxicity, developmental toxicity, liver toxicity, kidney toxicity, endocrine effects and several forms of cancer. Mechanistic research indicates that TCE induced carcinogenesis is complex involving multiple carcinogenic metabolites acting through multiple modes of action. Under EPA's proposed (1996) cancer guidelines, TCE can be characterized as, quote, highly likely to produce cancer in humans," closed quotes.

And they go on to say here, quote, "In addition, there are, the pathways are both oral and through inhalation." So it's consuming it through your mouth as well as through inhalation that these risks can come up. And it also indicates, "There are suggestions that TCE could affect children and adults differently. In addition, several chemicals have the potential to alter TCE's metabolism and clearance and subsequent toxicity. Conversely, TCE exposure can augment the toxicity of other chemicals. Widespread environmental

exposure to some of TCE's metabolites makes it important to consider the cumulative effect of TCE along with other environmental contaminants," closed quote.

So I'm wondering here -- I want to enter into just a brief colloquy with you on this as to where you are. If Harold's water supply well yields a sampling result of 4.9 parts per billion TCE, what's going to happen? Is the Army going to provide him an alternate source of water?

GARTH ANDERSON: Well, it's not a drinking water source if it's an irrigation well.

LYNN MOORER: No, I asked you water supply well. I'm saying if Harold's water supply well comes up with a sampling result of 4.9 parts per billion of TCE, what will happen as far as the Army's response?

GARTH ANDERSON: We'll continue to monitor it until it reaches five where --

LYNN MOORER: Okay. So it's just below the five level, and so you're not going to do anything about it?

GARTH ANDERSON: No.

LYNN MOORER: All right,. And if his water supply well yields a sampling result of 1.9 parts per billion of RDX, what will happen?

GARTH ANDERSON: Same thing. Our action levels I know -- it's hard for us to explain the action levels, but it is a level five and below -- or below five -- I shouldn't say five and below -- but below five is considered acceptable.

LYNN MOORER: All right. So if he has both a reading -- if a sample shows that that particular water has both 4.9 parts per billion of TCE and 1.9 parts per billion of RDX, will that affect the Army's response? Again, we're talking about cumulative or synergistic effects between these two chemicals.

GARTH ANDERSON: We would certainly look at it much more carefully if a monitoring well reading is that close to the action levels. But I can't give you a specific answer on, you know, cumulative effects between RDX and TCE tonight.

LYNN MOORER: All right. I mean, I'm noting that EPA's draft report talks about the cumulative effect of TCE along with other environmental contaminants. All right? They're saying there's a concern there. And you say you're looking at your Five-Year Review, that you're reevaluating your exposure assumptions and cleanup levels, are they still valid. I submit to you that since 1997 when the ROD was signed that there's a lot more information including that from EPA which suggests your exposure assumptions and your cleanup levels are not necessarily valid anymore.

Let me ask a follow-up question which is in the same vein here. Does your response plan

have a different response if this -- the two results that I asked about, the 4.9 on the TCE and the 1.9 on the RDX, were to come from Linda Wageman's water supply sampling results, factoring in that her family has several children, including small children, who would be affected by the contaminated water? Does your response plan factor in the difference for whether or not you've got children that EPA says children and adults are affected differently from this?

GARTH ANDERSON: Well, at the risk of getting into a detailed discussion on toxicology and Risk Assessment -- I really don't want to get into hypotheticals tonight -- but the Risk Assessment process is fairly complex. And I'd certainly be willing to engage in that in a more detailed conversation at another RAB meeting so we can have the right experts here to talk about those different effects.

LYNN MOORER: Well, Mr. Anderson, you have said you're working on a Five-Year Review.

GARTH ANDERSON: Yes.

LYNN MOORER: At a minimum, I would ask that you take a broader view based upon some of the most recent information and based upon the questions I posed to you as well as many of the questions that people in the -- members of the RAB and the public have asked, including Linda, for many of the past several RAB meetings. I mean, it's not very confidence building here when, consistent with what you say you're doing, we ask you pertinent questions right along those lines, are you broadening your consideration, and you give us a shuck-and-jive answer that says, oh, gee, well, I don't have the experts here, I don't want to get into a long conversation with you. That's not an acceptable response, Mr. Anderson. An acceptable response is, ah, you're right, those are concerns that should be factored in and we will be factoring them in in our Five-Year Review.

SCOTT MARQUESS: That was the answer.

LYNN MOORER: Well, thank you, Mr. Marquess. I'm glad to hear it.

SCOTT MARQUESS: Let me explain --

LYNN MOORER: Too bad Mr. Anderson doesn't give us these types of responses.

SCOTT MARQUESS: Let me explain that. The Five-Year Review looks at a lot of things including changes in toxicity of the constituents.

So we talked last time a little bit about the TCE, the cancer slope factor, the toxicity factor, the -- they call it a TCE Risk Assessment, which I think is probably something that you might have been reading from. But EPA proposed a new -- a revised cancer slope factor for TCE in 2001, and it's been the subject of much debate, and is still in that situation. And it may not -- you know, we've talked to some of our folks, and it may not

be -- it may be a couple of years before they finalize that. But that toxicity factor that's used to calculate these risks and set the action levels already build in uncertainty factors, factors of tens, hundreds and thousands even, to account for the synergistic effects that you talked about. So a lot of --

LYNN MOORER: What about the cumulative effects?

SCOTT MARQUESS: Well, those are -- you know, that's where we -- you know, so we put the toxicity factor and we build in uncertainty factors to account for things like different responses from different subgroups like children or elderly people or however, and then that's part of what's built into the global Risk Assessment for TCE. And so then you use that toxicity value to calculate the risk, the total risk. And when we devise a remedy to be protective, we add up all the risks from all the individual constituents and all the individual pathways to set the cleanup standards. And those are things that are consider in the numbers that have already been built. And what we would look at in the Five-Year Review is, well, are the numbers that we set, five and two, still protective based on any changes in the toxicity values for those chemicals that we've -- you know, that happened since '97 to now.

LYNN MOORER: But does it -- it's fair to say however, isn't it, that this sort of cancer risk slope factor -- is that the proper term -- was not what was used to come up with the 1997 ROD cleanup levels?

SCOTT MARQUESS: Well, it's a little different than that, because for TCE we have a maximum contaminant level. So it's not strictly a risk-based number. It's a regulatory number that is risk based, but there are other factors that go into it. So it's not --

LYNN MOORER: So what is the Five-Year review -- the Five-Year Review though opens up the analysis so that you're supposed to be plugging in the new or the updated information regarding the risk factors as well as exposure assumptions.

SCOTT MARQUESS: The Five-Year Review will account for changes to exposure assumptions, land use, toxicity, new pathways, you know, vapor intrusion. It will cover the gamut.

LYNN MOORER: All right. So will it look at whether or not some adjustments need to be made so if Harold's water does come up with a 4.9 TCE and a 1.9 RDX, that that needs to be -- say we've got a potential synergistic effect or something that factors into the fact that this -- even though they don't reach the five and the two, some response is necessary here? I'm asking on that as well as the differential between children and adults.

SCOTT MARQUESS: Well, what I was trying to say is those things are considered in the way the slope factor is determined. So the way that your issue I think would be addressed would be in changes to the slope factor and the toxicity factor.

LYNN MOORER: And that would be a component of what you're looking at with the

Five-Year Review or not?

SCOTT MARQUESS: Yes.

LYNN MOORER: All right. Isn't it correct that the last Risk Assessment, the most recent Risk Assessment for this site was in 2000?

SCOTT MARQUESS: That was probably the OU3 Risk Assessment. But that didn't address the stuff we're talking about here.

LYNN MOORER: I'm just saying for any place on this site --

SCOTT MARQUESS: Yes.

LYNN MOORER: -- the most recent Risk Assessment was 2000. So there hasn't been anything since then.

And what about the most recent Risk Assessment for what we're talking about here?

SCOTT MARQUESS: That was the ROD, '97.

LYNN MOORER: Yeah. Okay. So that's ten years. It's pretty outdated.

SCOTT MARQUESS: Not necessarily. I mean, that's why Five-Year Review was built into the process.

LYNN MOORER: You guys don't give a lot of confidence here that you're actually going go to be dealing with all the updated and more shall we say complicated factors that you should be looking at. You're not --

SCOTT MARQUESS: I thought that's what I tried to indicate, that the Five-Year Review
process is a comprehensive -- it looks at everything completely.

LYNN MOORER: Okay.

SCOTT MARQUESS: So what it would do is take the Risk Assessment done in '97, okay, upon which the remedy was based, all the assumptions that went into that, are those valid. Now we go through and check them one by one, are they all still valid, are there new things that we need to consider. So it should -- it's intended to be, and it will be, and we'll make sure that it is a comprehensive review of the remedy and its protectivness.

LYNN MOORER: How are you going to -- and perhaps this is a question for Mr. Anderson -- how are you going to report to us? I mean, are there going to be quarterly updates or something in writing that mark your progress in this Five-Year Review? What do you anticipate generating with respect to hard copy documentation that gives us an

idea of where you are in this process so we can -- and that's the first question. And the next question is when are we going to discuss this in detail at a RAB meeting?

GARTH ANDERSON: Well, just like all our documents, we produce them in draft form for regulatory review, and we follow that process. But we can report our progress on the Five-Year Review at each RAB.

LYNN MOORER: Let me rephrase the question. Is there a particular document that you have prepared to this point that says, okay, this is the Five-Year Review status report or something? I mean, what are you doing? Are you going to -- is the plan that you're just going to finally issue a report when it's all done at the end of it or something?

GARTH ANDERSON: Just like all documents, there's a certain period of preparation that we put into it. I guess I'm not sure what your question is.

SCOTT MARQUESS: There will be a Five-Year Review report that's submitted. There won't be interim progress reports along the way.

LYNN MOORER: Okay. So at the end of when you think your review is basically concluded, then there will be a document that summarizes that process?

SCOTT MARQUESS: Right.

LYNN MOORER: When do you anticipate that is going to be?

GARTH ANDERSON: Right now I have to look at the specific schedule, but I think we're submitting the document to EPA on or about July of this year.

SCOTT MARQUESS: I believe the fall.

MELISSA KONECKY: For their review?

GARTH ANDERSON: Yes.

LYNN MOORER: All right. So can you tell us now -- I mean, you're supposed to be working on this now; right? You're working on it now; right? Yes?

GARTH ANDERSON: Yes.

LYNN MOORER: Okay. So are you looking at a distinction between children and adults with respect to what's protective for them, for example?

GARTH ANDERSON: All Risk Assessments take into account children and adults, yes. So we -- as Scott said --

LYNN MOORER: The differentiation, Mr. Anderson, is what I'm talking about.

GARTH ANDERSON: Yeah, Risk Assessment differentiates between the two populations. We don't just look at a broad population. You look at risks to children; you look at risks to adults. Those are separately evaluated risk scenarios.

LYNN MOORER: Are you factoring in the cumulative effect of TCE along with other environmental contaminants?

GARTH ANDERSON: We look at all the assumptions that go into a Risk Assessment.

LYNN MOORER: I'm asking, are you factoring in the cumulative effect of TCE along with other environmental contaminants?

GARTH ANDERSON: If there's any information that has changed regarding that, yes, we would look at it.

SCOTT MARQUESS: Yes. Yes.

LYNN MOORER: You're saying what you will do. I'm asking you, are you doing it? You say you're working on it now. I want to know, are you doing that now?

GARTH ANDERSON: Yes.

LYNN MOORER: All right.

DEBBIE KRING: Debbie Kring with EPA. One thing that may help the RAB members, if the ROD was signed in '97, there should have been a first Five-Year Review done in 2002.

LYNN MOORER: That's a point we talked about a long time before. They said no, they didn't have --

THE VIDEOGRAPHER: Wait a minute.

Don't talk without a microphone, please.

SCOTT MARQUESS: Let me try to address that if I can. The Five-Year Review is triggered when you get an action that leaves contaminants or waste in place, and I think that aren't protective of unrestricted use and something else. So if it's not safe for anybody to be there, then that's what triggers the Five-Year Review. And so the first action -- OU1 action was residential cleanup, so it didn't trigger the action. And it's not triggered off a '97 ROD, it's triggered off an end date.

GARTH ANDERSON: Remedy in place.

SCOTT MARQUESS: So that's why.

LYNN MOORER: I appreciate Ms. Kring saying that. This is before you started coming to the meetings. But we had a long series of conversations about this at previous RAB meetings. And the explanation changed at every meeting as to why they didn't need to start the Five-Year Review yet and why it wasn't overdue yet.

GARTH ANDERSON: It's triggered by a remedy in place, and the remedy in place was 2002.

LYNN MOORER: Whatever. Your story changes every time.

GARTH ANDERSON: If you'd like to check CERCLA Law to verify --

LYNN MOORER: I'm happy to check the previous RAB meeting transcripts. You should see what McCollum told us. Have you reviewed to see what McCollum told us at the meetings that he chaired?

You should do that, Mr. Anderson. You can see why the Kansas City District of the Corps of Engineers has more than a little bit of a credibility problem.

GARTH ANDERSON: Okay.

MELISSA KONECKY: Could I follow up on some of this TCE stuff? I just wondered what progress Bart Eklund has made with his vapor intrusion evaluation that we talked about at the last RAB.

GARTH ANDERSON: What we're doing right now is we're continuing on to develop the work plan for vapor intrusion. We can take you that far. Right now Army policy prevents us from taking any action after the work plan until we get a resolution with the PRPs. Our headquarters requires us before we can take any action with vapor intrusion that we
have to have the PRPs on board with us to share some of the work. So until we get that resolved, we won't be taking any actual physical action on that. But we will complete the work plan so it will be ready to go if we get the green light to proceed with the actual work.

MELISSA KONECKY: When will that work plan be completed?

GARTH ANDERSON: We'll be submitting a draft of the work plan to EPA next month.

MELISSA KONECKY: Okay. To EPA next month?

GARTH ANDERSON: Yes.

LYNN MOORER: So is it called the Vapor Intrusion Work Plan? Or what do we look for?

GARTH ANDERSON: Yes.

LYNN MOORER: All right. Thank you.

MELISSA KONECKY: Someone asked this question too over the past few months. Do we know how much TCE is getting into the air through irrigation wells?

GARTH ANDERSON: I don't recall if that specific question was asked or not.

MELISSA KONECKY: I don't know if it was asked here.

LYNN MOORER: It's been asked here before.

MELISSA KONECKY: Oh, through irrigation wells specifically?

LYNN MOORER: He never answered.

GARTH ANDERSON: Well, we know theoretically it is possible. And we did have a long discussion on that as a pathway. Ms. Wageman had a discussion on that at one time. But we've never done a calculation on how much would actually go into the air from the irrigation well. Obviously it depends on the concentration coming out.

SCOTT MARQUESS: It probably will be addressed in the Five-Year Review. It should be a pathway that's considered in the Five-Year Review I would say. We had talked about in the past that –

Debbie, do you know, is it Hastings? The Hastings, Nebraska site, they have spray irrigation systems in place to strip volatiles out. But that's one aspect of some of the remedies that they have in place. And so we've talked about some of the data in there in the past where they actually did Risk Assessments, you know, different from here, but I think somewhat similar, same kinds of constituents, the same, you know, vapor. Now, whether the residents would be the same proximity here or there, I don't know. But those were deemed acceptable for those situations at that site. So that's the best that I can address. I mean, there is data to that effect that's available.

MELISSA KONECKY: And your extrapolating sort of or --

SCOTT MARQUESS: I would just say, it's not something that was evaluated previously as part of the Risk Assessments here. And it's probably something that ought to be included in the Five-Year Review and look at protectiveness.

MELISSA KONECKY: Okay. So that will be included in the Five-Year Review.

GARTH ANDERSON: Yes.

MELISSA KONECKY: Okay. And then one thing that kind of struck me when we came in, and I know Lorus' ears are probably burning because -- you know, that MUD drawdown map that he had asked about?

GARTH ANDERSON: Yes.

MELISSA KONECKY: I didn't see it anywhere or in any of the documents or anything. You know, he specifically requested a drawdown map showing, you know --

GARTH ANDERSON: Right. We provided that map to Dave Daniels (sic) -- McReynolds. I have a Risk Assessor named Dave Daniels. Sorry. Dave McReynolds picked that up from us. He was going to forward it to Lorus.

MELISSA KONECKY: Oh, could he forward that to a lot of the rest of us

LYNN MOORER: Mr. Anderson, that's not what was asked, and that's not what was promised at the last meeting. The transcript, page 61, I specifically asked, "Could you get a big version of it for us to display on the walls for our meetings along with these other ones?" And you said, "We could certainly print that off. That's easily done."

And I said, "That will be helpful to give us a perspective in addition to the other ones that you have. Will you do that?" Your response, "Yes."

You didn't do it. You didn't -- we asked for a big map, the drawdown map, to be posted on the wall here along with the other maps for comparison. It couldn't have been much clearer. You didn't do it.

MELISSA KONECKY: And so you've got a map for Dave to give to Lorus?

GARTH ANDERSON: Yes.

MELISSA KONECKY: Specifically what Lorus was asking for?

GARTH ANDERSON: Yes.

MELISSA KONECKY: Because I know a lot of others of us want to see that map just as much as Lorus does.

THE VIDEOGRAPHER: I have to take a break.

GARTH ANDERSON: We need to do a tape change real quick and we'll pick it back up.

(9:12 p.m. - Recess taken)

(At 9;25 a.m., with all parties present as
before, the following proceedings were had, to wit:)

GARTH ANDERSON: Yes?

MELISSA KONECKY: So Garth, you said that you're going to e-mail this drawdown map of the MUD pumping steady state at 104 MGD? You're going to e-mail that to us then?

GARTH ANDERSON: Yes. What I'd like to explain here is that when we talked about having an MUD drawdown map, we went back to the modeling report, and the figures that were in there didn't quite answer the mail on what we had committed to. So we used our own model which uses most of the same inputs and did our own drawdown, you know, using -- this particular one is 104 million gallons per day, which is steady state. It means you start and you pump, and that's what would happen if you pumped henceforth and forever more. That's the kind of drawdown you would get. And to explain the -- or illustrate the effects of the drawdown, we also put in our particle tracking mode, you know, to see what things in the plume would actually do under this super aggressive pumping, again, which is not a permitted condition, but we wanted to show the absolute worst case what would happen if MUD did pump at 104. So we ran this on our own, so I think it would better explain what the discussion was from the last RAB meeting.

MELISSA KONECKY: Well, if anybody gets this map and can't print it out for some reason or whatever, I'll try to get them a map then.

GARTH ANDERSON: Okay.

LYNN MOORER: I think you should -- this is Lynn Moorer again. I think you should provide that as a handout as well as on the wall for the next meeting, Mr. Anderson, just like you promised. For heaven sake, you promised, now deliver.

GARTH ANDERSON: We can do this one. This is our own map. We control this.

LYNN MOORER: Well, you have promised repeatedly in the past. Are you finally going to do it at this time?

GARTH ANDERSON: It will be up at the next RAB, yes.

MELISSA KONECKY: And those other two also?

GARTH ANDERSON: Yes. There's a series of map. There's one that we did at 52 MGD steady state, there's 104, and we also took a figure out of the MUD model, the modeling report. And we actually hand-drew our plume in there just so we could see how the drawdown affected the plume or what the proximity of the drawdown was to the plume.

LYNN MOORER: Is this the most current plume delineation that you've drawn in here?

GARTH ANDERSON: The one we've hand-drawn in is a -- obviously a hand-drawn depiction of this plume, yes.

LYNN MOORER: All right. So would you please make sure that you've got handouts available as well as having large wall maps?

GARTH ANDERSON: Yes.

LYNN MOORER: Thank you.

MELISSA KONECKY: Just one more thing about Lorus and the maps. I know that he's been requesting a map that would show not only where the contamination is above the action levels, but he's been requesting -- and I know this is possible -- you know, like shades of higher contaminations of TCE on down to the below-action levels, you know, so that we can all see really where all the contamination actually is as opposed to just cutting it off at, you know, five or two or whatever.

GARTH ANDERSON: Okay. We have discussed that in the past. We can -- we'll make an attempt to draw that map and see if it's meaningful. We should be able to do that. I have to see what it looks like once we try that and to see if it really is something that we could discuss at the RAB meeting.

MELISSA KONECKY: Well, I mean, even if we couldn't, you know, it would be just nice for each person's own personal reference, you know, just to be able to see even -- you know, like I say, even if it's not at the action level, you know, if it's below the action level, to still be able to see the lighter colored pink or something.

SCOTT MARQUESS: I think if you try to start -- Scott Marquess, EPA. If you try to start distinguishing between five and zero say, I don't think they have sufficient data to show you A 4, 3, 2, 1. Like you're going to have a -- you might have a -- if we want to draw a line, we've got an 8 and we've got a non-detect, so where is the 5 , where is the 4, where is the 3? You don't have data that is going to distinguish it that finely.

Now, the other part that you're asking for is something that would be very helpful to show, where is the thousand part. And that would be very helpful. That's something that we would like to see.

MELISSA KONECKY: You mean at the upper level?

SCOTT MARQUESS: Yeah, the higher end, where is the heart of the plume. That would be important. It would show -- it would give you a much better feel for what it is that needs to be cleaned up or what the site really kind of consists of.

GARTH ANDERSON: It depicts the interior of the plume more.

SCOTT MARQUESS: But you can do that really well on the eastern and the western side of the TCE plumes. There's a lot of data available to do that. And the two RDX plumes in the middle, there's not near as much data to be able to do that. But then to go from say RDX less than two and TCE less than five is going to be pretty hard.

MELISSA KONECKY: It's going to be pretty hard because there's not enough testing having been done outside of --

SCOTT MARQUESS: There hasn't been any motivation to define I want to say less than five; where is the 4 line, where is the 3 line, where is the 2 line, where is the 1 line. It's not going to be dramatically different than what you see.

GARTH ANDERSON: And there may be some localized areas where we've had low-level hits, you know, around MW85 that you would show a little bit different depiction of what the plume would look like. But along here you're not going to -- nothing's really going to change, and along the edges here, nothing's really going to change. But there may be a few localized spots that will be a little bit different.

MELISSA KONECKY: Well, that brings me to the question about the more concentrated areas that are inside of the plumes. Have those been identified in order to avoid, you know, like pulling the more contaminated areas across the relatively cleaner areas when you're pulling it towards the extraction well to clean it up? I mean, have you been able to identify all of the really concentrated areas within the plumes?

GARTH ANDERSON: Well, if you're on this side of the plumb, we have -- or this particular plume, we have a very good idea of what the whole makeup of the plume is based on the detailed sampling that we did in fall of '05, spring of '06.

LYNN MOORER: Meaning the easternmost plume?

GARTH ANDERSON: Correct.

LYNN MOORER: Remember, this is a transcript. If all you're looking at is the transcript, we have no idea what you're pointing to. So explain.

GARTH ANDERSON: So if you're on a Load Line 4 plume, the eastern plume, we have very good definition of where we took transects across the width of the plume. So that gives you a very good idea. These particular plumes, not so much. We had some interior wells for the Load Lines 2 and 3 plumes.

LYNN MOORER: So would you, Mr. Anderson, provide also at the next meeting the more delineated maps for Load Lines 1 and 4 that Mr. Marquess said are entirely possible?

GARTH ANDERSON: Yes. Lisa, are you taking notes on that one?

LISA THOLL: Uh-huh.

GARTH ANDERSON: Thank you.

LYNN MOORER: We'll hold you to it. You know, we're really tired of you promising and then not delivering, and then standing here and looking at us like you have no idea what we're talking about or claiming that you provided it when in fact you haven't. We can tell the difference, you know.

GARTH ANDERSON: Okay.

Ms. Konecky, another question?

MELISSA KONECKY: Yes. Melissa Konecky. Have there been any more hits of nitrotoluene and nitrobenzene in the six wells that USGS is monitoring?

GARTH ANDERSON: No, not that we've seen.

MELISSA KONECKY: Not that you've seen?

GARTH ANDERSON: No. In fact, the sampling event after the May 1 that we reported last time had the non-detects of those two compounds.

MELISSA KONECKY: Okay. So these were both non-detect?

MELISSA KONECKY: Or all six of them non-detect.

LYNN MOORER: And when is the next sampling event expected to be for those MUD wells?

GARTH ANDERSON: I don't know off the top of my head. USGS does that sampling. I'd have to check and get back with you on that one.

DAVID BARGEN: Quick question. David Bargen, Assistant City Attorney, City of Ashland.

What does SCW mean on the map? These locations down at the end of the westernmost plume say SCW locations. What are those again?

GARTH ANDERSON: It stands for Silver Creek water. That's a surface water sampling point.

DAVID BARGEN: Okay. So those are surface water sampling points?

GARTH ANDERSON: Yes.

DAVID BARGEN: Okay. And how far down Silver Creek is this SCW6, the furthest most downstream point that you sampled?

GARTH ANDERSON: Right there (indicating)?

DAVID BARGEN: Yeah.

GARTH ANDERSON: Dave, you want to --

DAVID DANDER: How far down?

DAVID BARGEN: Yeah. Is that as far downstream on Silver Creek that you are doing the testing?

DAVID DANDER: Yes, that's the farther one I've pulled the samples.

DAVID BARGEN: Okay. And what are the levels that you're finding on those observation points? I guess I didn't find that in the materials if it's in there.

GARTH ANDERSON: We'll look it up real quick and we'll get an answer before the end of the night. We've got it in our database.

DAVID BARGEN: Okay. Because Silver Creek runs toward Ashland, and that would be my constituents concern, with surface water in the area, what the levels are in those testing sites.

GARTH ANDERSON: Okay. We'll look it up for you in just a second.

DAVID BARGEN: Thank you.

GARTH ANDERSON: You bet.

MELISSA KONECKY: One more question that I have. That I know of. Do you have a document -- let's see. I'm sorry. Oh, well I've got two more questions. Where is the official document outlining criteria for evaluating Load Line 1? Is there one, a document, on making the criteria for evaluation?

GARTH ANDERSON: It's both in the Containment Evaluation Work Plan and it should be in the Construction Work Plan for Load line 1.

MELISSA KONECKY: Okay.

GARTH ANDERSON: You're talking about what evaluation -- where do we find the criteria for the evaluation of the EW12 and 13 system?

MELISSA KONECKY: Yeah. I mean, is there one document having to do with that or it's just part of a bigger --

GARTH ANDERSON: Well, it's part of our 15-month operation. We have a work plan that details the construction; we have an Operation and Maintenance Plan for every system that's in place. Then at the end of that operation period, initial operation period, then we look at all the data to ensure that we're achieving capture, we look at the capture zones and the chemical data that's been collected over that year.

MELISSA KONECKY: So if this is anywhere, it's probably in the Mead library here?

GARTH ANDERSON: Yes.

LYNN MOORER: It would be helpful, Mr. Anderson -- you see, we're obviously asking specific questions. And you say, yeah, it's in a report. Well, that's not good enough. You need to give us the title of the report, and if possible, like say, well, it's in chapter six, or some such thing. You know, it shouldn't have to be such a giant hunt all the time to try to track down the detailed information. You clearly don't bring the detailed information to these meetings. And you say, well, yeah, we're working on it, it's in the plan. So what document, what chapter, if you know --

GARTH ANDERSON: I don't know it off the top of my head. I will --

LYNN MOORER: -- contains the criteria for evaluating Load Line 1? This was asked at like three previous meetings.

SCOTT MARQUESS: Are you asking how do you know whether the Load Line 1 extraction well system is containing the plume? Is that the question?

MELISSA KONECKY: Well, that's the bottom line. But I just wanted to even look at the document.

SCOTT MARQUESS: Well, I think the document -- the document you're looking for would be the Containment Evaluation Work Plan, which I think you have CDs -- do you have CDs in the back?

GARTH ANDERSON: Yes.

SCOTT MARQUESS: So that document, you could take it home with you on CD tonight. And it's in the library.

MELISSA KONECKY: All righty. And then -- let's see. Also could you share with all of us a copy of the letter you sent to Senator Nelson outlining your Disaster Response Plan?

GARTH ANDERSON: I could. I could print that out tonight if -- and I could send people home with copies tonight. I have it on my laptop.

MELISSA KONECKY: Cool. Could you do that?

GARTH ANDERSON: Sure.

MELISSA KONECKY: Great. Thank you.

LYNN MOORER: How many people want copies?

(Show of hands).

GARTH ANDERSON: Okay. And in that letter he also received a copy of the Containment Evaluation Work Plan. Don't let me forget, Lisa.

And in answer to your question about the Silver Creek surface water, we have had no detections in that. And we hope it stays that way.

DAVID BARGEN: Thank you. And are you confident that these locations, these same locations, will catch anything that would enter Silver Creek? Might there be contamination that could get to Silver Creek that was going to be detected in these samplings, or if there is contamination, it will be found here first?

GARTH ANDERSON: Well, we have monitoring wells -- a series of monitoring wells that we're most concerned about. But we're also concerned about surface water. So they're not necessarily directly related, but, you know, two different pathways. So we make sure we collect groundwater samples down here as well as the surface water samples to make sure nothing is actually being released from the site.

DAVID BARGEN: So for both these chemicals, TCE and RDX, there's been no detection whatsoever, or below the five or below whatever the levels are for each one?

GARTH ANDERSON: Were they non-detect for both, Brady, or Dave

DAVID DANDER: I looked up the SCW. And yes, it was non-detect.

BRADY BIGELOW: Non-detect.

DAVID BARGEN: Non-detect. Okay. And another question is how -- and this may have covered in a previous meeting. I wasn't here. Sorry. How quickly or how fast are both of these plumes moving to the southeast, or whichever direction they are moving?

GARTH ANDERSON: Are you speaking specifically of --

DAVID BARGEN: For each one, how fast -- what's the rate of flow that you can detect

for each one?

GARTH ANDERSON: Well, none of them are moving past our extraction wells in these three plumes. This one we're still evaluating, but its data seems to indicate that this little bit of contamination that's beyond the extraction wells here, the levels are going down.

DAVID BARGEN: So water's probably being pulled backwards towards the extraction wells?

GARTH ANDERSON: Perhaps.

(Ms. Moorer laughs).

GARTH ANDERSON: When we do the full evaluation, we'll have a better understanding of what is actually happening here. Because when you have an extraction well system, there's a certain spot here that's called the stagnation zone where the extraction well may not pull it back, it will just -- it may just sit there until it attenuates naturally or disappears naturally. But until we finish our assessment to see where the contamination goes, then we can't answer that.

DAVID BARGEN: So if it does sit there and it's not being extracted backwards, it will sit there and eventually dissipate and not cause a problem?

GARTH ANDERSON: There's a certain zone where that would happen, yes.

DAVID BARGEN: Thank you.

LYNN MOORER: Mr. Anderson, would you please tell us how fast groundwater moves normally in this area?

GARTH ANDERSON: What did we say last time for groundwater? Let me get an answer for that. I gave a specific number last time about how fast groundwater moved, and I want to make sure we're consistent with what we said last time.

LYNN MOORER: And then also the second question is how fast contaminated -- or the contamination at the site, mainly TCE and RDX, moves.

GARTH ANDERSON: Well, the contamination actually moves more slowly than groundwater does.

LYNN MOORER: I know. I'm asking for the two rates.

GARTH ANDERSON: I'll get that for you if you can bear with me.

I'll get that number by the end of the RAB meeting. I have it with me. And we'll make sure that number gets out to everybody.

Anybody else have any more questions about this figure that's up on the board right now?

All right. Moving on, another thing that we have planned that we think is an important component of what we do here is updating our Community Relations Plan. We obviously have work to do on getting things out to the community, information to the community, to the RAB, and to others that don't get a chance to come to the RABs. So for this year we're going to be updating a plan. We're going to be trying to set up interviews with
members of the community to find out what things we can do better. We're preparing some questionnaires and some other things to try to -- to get this information to improve the information flow to the entire community. So you'll see some efforts coming out on that here in the next month or so.

MELISSA KONECKY: Melissa Konecky. Is that something that you guys have just recently e-mailed, that Community Relations survey thing?

GARTH ANDERSON: No.

MELISSA KONECKY: And the purpose of this is what?

GARTH ANDERSON: On a site like this, we're required to have to have a Community Relations Plan, because our projects aren't just contained on a military installation, they're out -- you know, private landowners, public landowners. Our projects affect a lot of people, so we want to make sure that the things that we're doing, the information between the Army, the regulators and the community, you know, flows the way it should. And the RAB is one venue, but there are other venues to try to get information out to the public. And we need to find out what community thinks would be the best venue, the best medium to do that.

MELISSA KONECKY: I'm just trying to think of what other options there could be, I mean, besides a group meeting like this where everyone is here to listen to everything that you guys have to say.

GARTH ANDERSON: Well, a lot of people out here don't get a chance to come to the RABs. And we want to make sure that we can get information to them. There are multiple channels of communication with the community.

LYNN MOORER: So why don't you provide us the information that we ask for? And why is your information provision so lousy? This seems like a total exercise in futility and a waste of time when you don't do what you specifically promise.

MELISSA KONECKY: It just sounds like a PR thing when -- you know, taking away time and energy from the task at hand which is, you know, containing the site and then cleaning it up and protecting people.

GARTH ANDERSON: Well, there are other activities that we can do on the site to help get the word out. I thought the site tour that we did in July was very well received. And, you know, a lot of people that don't normally come to the RABs came to the site whereas they could get a picture of what the site looked like, what the treatment plant looked like, and it gave them a better perspective of was actually going on at the site. We could sit in here and talk at a meeting with slides, but a lot of people prefer going out and actually seeing the activities. That's just one example of things that we would want to see how the community would be receptive to.

MELISSA KONECKY: What else? I mean --

GARTH ANDERSON: Are the websites -- is the website a good thing for people, you know, not just people that come to the RAB meetings but for everybody that can't normally get to these? Are e-mail lists, direct mailings -- what other ways are there to communicate with the broad community?

MELISSA KONECKY: Because it just seems like you're covering -- you're doing all of those already.

LYNN MOORER: Poorly.

GARTH ANDERSON: Again, the RAB is just one venue for reaching the community, a very important one. But again, there are other people out there that we come in contact with that don't get a chance to come to these and may want opportunities to provide input or just talk to us.

LYNN MOORER: Your website is chronically out of date, very limited information. I'm interested to know, say somebody wastes time to fill out a questionnaire for you or sit down and do an interview with you. What are you going to do with that information other than to say, yeah, we did a Community Relations Plan, check that little box, but you're going to totally ignore all the input that you receive just like you ignore the vast majority of the requests and the input you receive here. What are you going to do with the information that you receive from interviews, questionnaires or other outreach?

GARTH ANDERSON: I think we've shown continued improvement over the past couple years in getting the word out to the community.

LYNN MOORER: Get what out to the community? "The word," what word?

GARTH ANDERSON: Information to the community. And we're trying to do continuous improvement. And there's obviously things we can do better, and we want to keep moving in that direction.

LYNN MOORER: Well, I'll tell you for sure that your credibility is extremely low because you virtually never, ever admit when you are not carrying through on your commitments. You never admit when you misrepresent information to the public. So

you continue to view the RAB, you continue to view the site visit, you continue to view
all of this other stuff just as a PR gambit rather than being straight with the information and truly viewing any of this community contact as an information exchange experience. Rather you put out these little PR things. You don't give us hard data that we ask for. You twist virtually everything we ask for into a little PR scam. That is not acceptable, Mr. Anderson. I assure you, nobody in the community is satisfied with this kind of stuff.

GARTH ANDERSON: I'm not sure I agree with that assessment, but that's your opinion.

But anyway, we will again continue with efforts to improve how we communicate with the community. And so we'll see some efforts on that this year.

Yes?

DEBBIE KRING: Debbie Kring with EPA. One of the rationales for putting a Community Relations Plan together --and at EPA we call them Community Involvement Plans -- it's a component under the National Contingency Plan. It's a requirement by law that they be put in place. And they basically serve as a communications strategy indicating the who, what, when, where and why of the activities ongoing at a site. And they should be updated regularly, comparable if not more so than a Five-Year Review. Every time congressional members change, points of contact change, activities at the site change, any land use changes, basic concepts that support the site should be included in there, as well as a whole array of different types of organizations that are interested in the site from non-profits to elected officials. It's a whole realm of a plan that supports what's ongoing at the site. So I honestly believe it's not conducive to being a warm and fuzzy document. It really is supposed to support all the activities at the site, and we're required by law to do it. And like I say, they should be updated regularly to support what's going on every time a change is made. And if you have congressional changes every two or four years, they need to be done like that, they change as frequently as every one to two years. So they're kind of when things change in the site activity, as you're going through processes from the proposed plan to the RI and FS, onto the design or remedial action on the ROD itself, things change during that process, and we intentionally try and keep them updated. EPA will be overseeing the Corps' Community Relations Plan.

GARTH ANDERSON: She brought up a good point about another component of the Community Relations Plan is knowing who the elected officials are and key local and County government officials.

LYNN MOORER: Plugging in when you've got new appointed and elected officials is easy. I mean, that's just superficial.

Ms. Kring, when you have -- is it acceptable as a part of a Community Relations Plan that when specific information is requested by the community and it's promised to be provided and it's not, is it acceptable for it not to be provided?

DEBBIE KRING: I think the proviso for giving and receiving information is a how in a Community Relations aspect. I don't think that's part of this plan. The plan is primarily what's going on at the site. How information is disseminated or received I think is ongoing at meetings, and I think it requires improvement whether it's the Corps or EPA or whoever's doing the information gathering.

So, you know, that's not a concrete answer at all.

LYNN MOORER: You're right. That's a dodge.

DEBBIE KRING: Well, it's not a dodge. If you ask me and it's my site -- and I've had sites for ten years at EPA -- I may give a different answer. This is not my site on the technical side.

GARTH ANDERSON: Okay. Our other Operable Unit here at the site is Operable Unit No. 3. We've touched on it a few times at meetings. We have a couple of key events coming up for this Operable Unit. One, a non-time-critical removal action for contamination, and an Ordnance and Explosives Recurring Review, which is kind of equivalent to a Five-Year Review. And I'll go into that in some more detail.

What is OU3? Well, there are three Operable Units here at the site. OU1 dealt with soil contamination, OU2 is the ongoing Groundwater Containment Action, and OU3 is an Operable Unit designed to take care of all those little miscellaneous sites that didn't necessarily fall into soil or groundwater. It's site-wide and it's designed to follow up and take care of a lot of the loose ends that we find at the site.

The feasibility study for the site was approved in 2000. And one of the key things it did, it identified some contamination that was related to some painting operations at a couple of the Load Lines, Load Lines 2 and 4. And we'll go more into that in a little bit.

One of the things that we did, what we're anticipating doing is removing approximately a thousand cubic yards of some contaminated soil from that operation, contaminated with antimony, a heavy metal, and eventually excavation and disposal of that soil in an approved off-site landfill.

What's the Removal Action Process? It's intended to remove risk. When I say that, a removal action doesn't always physically remove something. You could remove risk by putting up a fence or some other means. But it just so happens in this case we are actually going to remove contaminated soil.

A removal action can take place at any time during the CERCLA process, from the time you start your site investigation all the way through the ROD. What it's intended to do -- there are two types of removal actions, one is a time-critical removal action where you've identified something during your investigation that is an imminent threat to human health and the environmental, and you go out there and take care of it right away without having to see the whole Operable Unit through to the end.

Another one is a non-time-critical removal action; you see something out there, it's easy to get to, it's easy to take care of now, might as well do it now rather than wait for the whole ROD to be -- the whole Record of Decision to be finalized. And that's the one that -- that's the category that we're falling into. We know the soil, it's fairly easy to take care of, we have the funding this year to do it, so we're going to go ahead and do it.

Now, there is public participation involved in a removal action. There's a 30-day public comment period on the EE/CA. Now, we have -- an EE/CA is a document -- it stands for Engineering Evaluation/Cost Analysis. It's very similar to a feasibility study where you've identified the contamination, you've looked at some alternatives to deal with the contamination, and then you evaluate the alternatives to see which ones best meet the
needs of the project.

Now, right now we have an approved FS. It meets the requirements of an EE/CA. So we'll be disseminating the feasibility study as an EE/CA because it does meet the criteria. And based on public review, we'll accept public comments on that particular document of what our preferred remedy for this removal action will be.

And you'll know when we're going to have this ready for public review. We will place a notice in the paper, we'll send out letters, we'll send out things on our e-mail list so everyone knows that this document is available for review.

LYNN MOORER: Mr. Anderson, Lynn Moorer. Does this include any PCB contaminated materials?

GARTH ANDERSON: No.

LYNN MOORER: How do you know that?

GARTH ANDERSON: We did several PCB removal actions in the nineties. And we've since closed out all PCB actions on the site.

LYNN MOORER: So you're certain that there is no remaining PCB contamination anywhere on the site?

GARTH ANDERSON: We're fairly certain. During investigations in the nineties we identified all areas that did have PCBs because there may have been electrical transformers stored there or we had records of PCBs being disposed of.

LYNN MOORER: What about at this potential landfill? Are you certain the potential landfill doesn't have PCB contamination?

GARTH ANDERSON: When we ship soil off site, before we leave the site, we have to do a complete sampling, characterize the soil to make sure there's not other stuff in there,

and that it's suitable for disposal in a landfill. So when we actually go through the removal action, we'll know exactly what we're sending off site.

LYNN MOORER: So the answer to my question is, you're not actually totally certain that all the PCB contaminated materials are off, there might be some in the landfill?

GARTH ANDERSON: I can't make an absolute guarantee that there's no other PCBs on the site. But we have looked at every reasonable location on the site for PCBs and dealt with them accordingly. And EPA has agreed with our assessment on that.

LYNN MOORER: So go on and talk more about then how you would characterize the potential landfill material you take. You go through all of that and you do a thorough examination of everything that you pull up there from that area?

GARTH ANDERSON: Yes. Let me -- we're going to go through some of the slides in detail a little bit better. Slide please. I'll get to that in just a second. I have a few maps to throw up there.

Some of the alternatives that we looked at in the feasibility study, one of them is no action; we always have to look at that. Obviously it's not a preferred alternative. The second one would be to put to put a cap over the contaminated soil, pavement or some type of engineered cap. The third one, excavation and off-site disposal, that's the one that we're recommending to do, just dig it up, get it out of here. And then alternative four was a combination where we cap the soil at the Load Lines and excavate the soil at the other site.

Cleanup locations, we had Load Line 2, which is here, and Load Line 4, which is right here (indicating). Again, those are contamination associated with some painting operations when the plant was in full swing. And then the third area is potential landfill in the vicinity of the NRD reservoir.

This is a typical Load Line schematic. This is actually north on this end. You would actually tip it up if you were looking at a map. But there's a paint storage and mixing building right here, and the contamination is in the vicinity of this actual painting operation on both Load Line 2 and Load Line 4.

And the potential landfill area, we've delineated the contamination through the OU3 RI and got about 600 cubic yards that have been delineated that we will excavate the soil. That's in this area here (indicating).

One thing to keep in mind when we do the excavation, we've got a fairly good idea of where it is, but we will continue to excavate until we get to non-detect on the antimony so we know we're finally clean when we're stopping.

LYNN MOORER: Mr. Anderson, the antimony then you'd expect to be located where? Is it in the landfill or in one of the Load Lines or both?

GARTH ANDERSON: Both. Well, not in the landfill. You've got to distinguish between what was called the potential landfill area, the vicinity of the NRD reservior, and then the actual landfill which is south of there. This is not in the actual landfill itself.

LYNN MOORER: Okay.

GARTH ANDERSON: So it's an area where certain things were dumped. There was a few trenches that have been excavated over the years. But this was a -- we did an extensive investigation up in that area, and that's all we found up there.

LYNN MOORER: All -- what is all that you found where?

GARTH ANDERSON: In a potential landfill area, after we did a supplementary remedial
investigation for Operable Unit 3, the only soil or contamination found that posed any risk was at the localized area of antimony contamination.

LYNN MOORER: At the potential landfill?

GARTH ANDERSON: Yes.

LYNN MOORER: It's not clear to me how you can -- can you explain to me how you can assure yourself you don't have an imminent risk and that this is a non-time-critical removal action if you haven't fully -- if you don't know what all is in that potential landfill?

GARTH ANDERSON: We have a very good idea of what's in that potential landfill. Part of it was excavated during OU1.

LYNN MOORER: But you just told me you're not sure that you got all the PCB contaminated materials out.

GARTH ANDERSON: What I said is I can't one hundred percent guarantee that all the PCBs are -- we have done due diligence and done extensive investigations, and the regulatory -- NDEQ and EPA concur with our finding that we've taken care of all the PCBs at the site.

Ms. Konecky, do you have a question?

MELISSA KONECKY: So when you characterize the area, you go ahead and do like the push at a certain grid spacing?

GARTH ANDERSON: No, these were soils samples that we took during a remedial investigation.

MELISSA KONECKY: What is the standard?

LYNN MOORER: What was the size of the grid?

MELISSA KONECKY: Yeah.

GARTH ANDERSON: I don't have that information off the top of my head. We can get that answer for you.

Lisa, I don't know if you recall off the top of your head what the soil sampling grid was.

LYNN MOORER: It's the size of the grid as well as the spacing, you know, how far between each sample so that you have an idea whether or not this was truly an intensive investigation or just not so intensive.

LISA THOLL: Lisa Tholl with URS.

I did actually the work in these areas and collected a lot of the soil samples. But it was back in '95. A lot of years has passed since then. So I can't answer right this second the exact spacing. But we actually focused the investigation more on what we found first with geophysical and then placed sampling locations based on anomaly locations. So it wasn't originally set up as, for example, a 50-foot grid or a 10-foot grid, it was more based on what we found during the geophysical.

But yes, we can pull a drawing from the Operable Unit No. 3 RI report and have it available at the next RAB as 11 by 17 to show you what was done in that area.

MELISSA KONECKY: That would be great.

Thank you.

LYNN MOORER: Thank you. We look forward do it.

SCOTT MARQUESS: I just want to chime in, this action in OU3 is not the final action to say that we're done with this Operable Unit or this part of the cleanup. There will be other elements that will likely need to be addressed as part of the final remedy. Those would include potentially institutional controls, actions to specify how we're going to handle ordnance, if there's any additional ordnance cleanup or controls that need to be put in place, and then finally the third component would be if there are in fact any other components or areas within OU3 that need to be actively addressed. So this is again, as Garth described, an interim action, so it's only intended to be part of the solution, and there is more yet to follow. And I believe the plan to get to that is going to be provided next month.

GARTH ANDERSON: Okay. If there's no further questions on the removal action, I'll move on to the Ordnance and -- Scott, do you have one more comment?

SCOTT MARQUESS: Were we going to have like a public meeting or an availability session --

GARTH ANDERSON: Yes. If we can back up to -- back up. Back up. One more. Actually go forward one.

Yeah, during the 30-day public comment period we will have a scheduled public availability session where for those who want to come in and get more information on OU3, we can sit down and explain the data, go over detailed questions like the one that Ms. Konecky just asked so you can have a good understanding of what actually went on at the site. It will be somewhere in the middle of the 30-day comment period, so maybe take an opportunity to review the document, come in for questions, and then have another couple of weeks to provide your comments on the removal action.

LYNN MOORER: When is this?

GARTH ANDERSON: We have not scheduled it yet. We would like to have it next month. We wanted to check with the community to see when the best date might be.

NANCY GAARDER: Nancy Gaarder, Omaha World Herald.

What are the ranges of antimony concentration? And what's the cleanup standard, if you have that?

GARTH ANDERSON: Well, we can check and get that answer before the end of the RAB. I'll have to go back and look at the document to make sure that we're hitting it right, giving you the right answer.

LYNN MOORER: Mr. Anderson, I think that a public meeting makes a lot more sense than a public availability session. Obviously this is not something you've talked about at previous RAB meetings, at least not for the last -- I don't ever know that you've ever talked about OU3 -- and it's understandable, you haven't been doing anything on it for quite a long time.

Now, there are -- so we don't have a lot of information on this. I think that a public meeting makes a lot more sense than a public availability session. Obviously everybody needs to have the opportunity to hear the same information. It should be available to everybody in the same fashion. Public availability sessions are -- frequently have one person tell somebody one thing and another person hears another version, and people are not getting all the same information available all at the same time. So I would request you do a public meeting rather than a public availability session.

GARTH ANDERSON: Well, what we would entertain is possibly a combination of both, much like we do here where we have a certain period where some people can get off work, they just have a quick question about the document, they come in and talk to us

one on one, they may not be able to come to a public meeting. So a combination of both is preferable to one or the other.

LYNN MOORER: I think that sounds like a better idea. The point is, there's some basic questions -- like I want to know what Nancy asked. I'd like to have that information. I'd like to have the same information that's provided to Melissa. It's not acceptable just to provide it to the one person who asks, you need to make it available at least to everybody.

GARTH ANDERSON: I think we could do a public meeting and keep it focused on OU3 only.

And is there a -- I'll throw out some possible dates in February. We'd like to have it next month.

MELISSA KONECKY: I'd have to look at like the community calendar.

GARTH ANDERSON: Okay. If you can get back to me on what dates you think would be good for the community, then we can schedule that.

MELISSA KONECKY: Okay. All righty.

GARTH ANDERSON: Ordnance and Explosives Recurring Review. This is analogous to a Five-Year Review. At this site there was a -- obviously there was a bomb pack and Load Line. Although, you know, no bombs were ever disposed of, there were certain components of bombs that were either tested or maybe disposed of out here, principally things likes fuses and small items like that.

We're required to review the response actions that we've taken over the years to make sure that they're still protective, much like we do in a Five-Year Review, have land uses change, are the response actions still valid.

So the process is we look at all the existing work that's been done before, all the removal actions, the recurring reviews and the land use of some things we've made in the past. We look at new information that may have come about. Because most of this takes place on university land, we may take a look at their master plan, does their master plan look into expanding a specific area.

I know Bruce Haley has already talked to us about investigation, what they've done in certain areas, that they require a little more diligence for OE.

This also requires a public availability session or public meeting to make sure that the information is -- and a discussion takes place between the Army and the community. So this would be another component of the public meeting that we could have in February. It really is a component of OU3, so I think it would be appropriate to discuss this at the same time.

LYNN MOORER: Same meeting?

GARTH ANDERSON: Yes.

Now, once we've done all that, then we can complete the Recurring Review Report.

Okay. We conducted a number of removal actions between 1996 and 1999. We performed geophysical surveys, electromagnetic surveys of areas where -- that we knew had some type of ordnance activity on them. And these areas were cleared with the best available technology of any ordnance and ordnance components.

Because of the nature of ordnance, it requires a little bit different approach in that we go back and review those actions to make sure they're still appropriate and that it's still being protective of the activities on the site.

Right now the 2006 Recurring Review, we'll have it finalized by July of this year. I'm going to go to the five areas that we'll be looking at.

We have the culvert area just to the west of the Load Line 1 plume. And most of the other areas are up here in the vicinity of the NRD reservoir. We have the north burning ground, the landfill area kind of by the old sewage treatment plant, and we have the proving range and then the NRD reservoir potential landfill area.

Now, the recurring review, we don't go out and collect any additional samples if no additional field work was done on this. We have already done all that field work; we've done the removal actions. We're just making sure what we've done in the past is still valid.

Okay. Any questions about the OE Recurring Review?

Yes?

LYNN MOORER: So what does the site visit -- when does that come in? I mean, that doesn't mean us?

GARTH ANDERSON: No. That's some of our folks. We have -- the Corps of Engineers has OE experts. We have centers of expertise in both our Omaha district and our Huntsville center, Huntsville, Alabama. And it's their mission to deal with OE nationwide. So they come up and help us do an assessment of the site to make sure we're still on track.

LYNN MOORER: Would it be possible at the public meeting that we're going to schedule here sometime in the next month on OU3 and OE recurring review that you get some photographs for us, you know, of the areas, if there's anything useful that would help illuminate it? Because this is basically something we haven't talked about, you

know, we haven't really thought much about either of these areas. And, for example, if there's some physical characteristic that these pictures would help show, like particularly right around the NRD reservoir, it seems to me that might be useful. You know, nothing fancy.

GARTH ANDERSON: We have some aerial maps that may be illuminating.

LYNN MOORER: Right, precisely.

GARTH ANDERSON: We have maps from previous OE removal actions that should be fairly detailed.

LYNN MOORER: Yeah, and like the culvert area for example. More of a visual understanding of these areas. Because a lot of people might think, oh yeah I know where that is

GARTH ANDERSON: Sure. Scott, you got a comment?

LYNN MOORER: This is the second report. They've done one of these already that's in the repository. December '02 I think. Anyway, this OE Recurring Review Report is in the repository. It has pictures. So this will be building on that.

GARTH ANDERSON: Bruce, you had a question?

BRUCE HALEY: Yeah. This is Bruce Haley from the university.

Just one quick question, Garth. And it's on the Recurring Review. And we're talking about current site conditions and changes.

GARTH ANDERSON: Yes.

BRUCE HALEY: Specifically about what the university's been doing at the landfill, at the wildlife area. We're going to be removing some trenches out there. Everyone knows that. What would change -- what would trigger Huntsville to come out and do a further on-site investigation based upon what we're going to be doing?

GARTH ANDERSON: Well, again, I'll have to go back and make sure I look at the assumptions from previous removal actions. But when you do a removal actions, there are certain assumptions that are made about land use. And you tailor your removal action according to those assumptions, and then you can project what future land use might be. If that deviates from what we assumed previously, much like a Five-Year Review, then that may trigger some other action on the part of one of our OE design centers to do some additional work.

BRUCE HALEY: Well, I know that based upon past historical photos that are available, we know that there's been some activity prior to when the university took over the

landfill that's out there. And so I guess it still comes back to, you know, we're going to be digging in this stuff. You know, we brought this up before. You already mentioned that.

GARTH ANDERSON: Right.

BRUCE HALEY: I know the questionnaire has been already sent to Dan Duncan because I've seen it. I'm just kind of wondering what process Huntsville -- I mean, it's all a paper process right now you're saying?

GARTH ANDERSON: Yes.

BRUCE HALEY: And so I guess the thing is, what point again would that trigger them to think a little bit more about what -- you know, is it the history of what may have been put in the landfill? Will they relook at that and then will they compare it to where we're going to be doing our work and then maybe something will happen after that? I mean, are
they going to contact us or come out and say, hey, you guys are going to be doing this work in this area, how deep are you going, how far are you going, things like that?

GARTH ANDERSON: Yeah. That's why -- the university is obviously our most important entity to interview because you guys are the major landowners in this case. So yeah, we want to make sure we have a full understanding of university activities, future plans for the area, to make sure that all the assumptions are still valid. The historical part is fairly well established. There's probably nothing new we would uncover there. But much like when you had to do some intrusive activities before, you had to have OE avoidance, you had to have a certified contractor out there to make sure that he knew what a piece of ordnance looked like to make sure that you avoided it and didn't cause any injuries.

LYNN MOORER: To follow up on what you just talked about, then on each of these areas, are you going to be sharing with us what the current use is? Like I don't know who owns the land there in the culvert area. I mean, is that a university thing?

BRUCE HALEY: That's the university.

GARTH ANDERSON: That's university.

LYNN MOORER: Okay. And then what about all the other areas that have a little balloon on them, you know, like the landfill area, old sewage plant, all that stuff, is that all university land too?

BRUCE HALEY: No.

GARTH ANDERSON: Not all of it.

LYNN MOORER: Who owns that?

GARTH ANDERSON: I don't have specific names right now. Some of it is in private land ownership.

LYNN MOORER: Well, it seems to me that for this meeting that we're going to be setting up, in order for the public to be able to give you somewhat informed comment as to what should be happening, then we need to know who the current owners are and what the current usage is as far as you know, okay, in order to be able to get a better idea of where they are. These pictures are nice, but it's hard for us to tell really the details of --

GARTH ANDERSON: And we will certainly interview the current landowner of a particular piece of property to see what their intent might be. If it appears they're going to farm it henceforth and forever more, then that doesn't change our assumptions that we went into with the original removal action.

LYNN MOORER: Sure. Right. But for the meeting if you could just provide, okay, we know this is farmland and it's owned by so and so, at least generally so that we have an idea of what you're talking about here.

GARTH ANDERSON: Okay.

SCOTT MARQUESS: Generally, I mean, it's pretty simple. Four of those areas are all contiguous and they're within a very small area, and they are -- I thought the university owned most of that.

BRUCE HALEY: Well, I don't think we own the north -- if I'm right, I don't think we own the north burning ground or the proving range.

SCOTT MARQUESS: Well, those are all in a very small area just adjacent to the reservoir north of the sewage treatment plant. So there's farming around that, on that, it's -- there's, you know, whatever, wildlife.

GARTH ANDERSON: Well, we'll establish that specifically.

BRUCE HALEY: Yes, it's the wildlife area, blah, blah, blah, no homes.

LYNN MOORER: No homes; right?

GARTH ANDERSON: There's no homes there.

LYNN MOORER: Are there any wells up there?

GARTH ANDERSON: There are wells in the vicinity. I mean, you can compare the maps. But we've got wells in and wells planned for this area. But that doesn't really affect OE much.

LYNN MOORER: They're all monitoring wells?

GARTH ANDERSON: Right.

LYNN MOORER: Okay.

GARTH ANDERSON: Okay. I think this would probably be an appropriate time for a tape change, and then we'll get back to wrapping some things up, making sure that we've enumerated all the action items and established a date for the next RAB meeting, and then we'll call it a night.

(10:20 p.m. - Recess taken)

(At 10:35 p.m., with all parties present as before, the following proceedings were had, to wit:)

GARTH ANDERSON: Okay. There were a couple questions lingering out there. One of the questions that was asked was what was the velocity of groundwater and the velocity of contamination at the site.

Generally site wide when you move with the groundwater gradient, you know, moving this direction (indicating). Generally it moves about two feet per day. You know, you'll have different velocities at different parts of the site depending on, you know, the geology underneath. But just for a rule of thumb, it's about two feet per day. The contamination moves somewhat more slowly because of certain factors; it gets dispersed, there's retardation from the soil, and it just doesn't move right with the groundwater. And it moves at about one and a half feet per day.

DAVID BARGEN: That was my question. So one and a half feet is the fastest rate from your calculation --

GARTH ANDERSON: Yes. And that's if it's just moving freely without anything impeding it or -- you know, it's on its way down to an extraction well. If you just left it to go on its own, it would be two feet per day generally.

DAVID BARGEN: And how much do you think it's going to slow down with the extraction wells?

GARTH ANDERSON: Well, what happens is the contamination, when it gets to the extraction well, that each extraction well has a certain capture zone that, you know, any particle of water that comes down here is going to get captured by that extraction well. Now, there's other -- if there's groundwater going this way and over her on this side, eventually it all comes back together. But at least in these localized areas it's capturing all the groundwater that has contamination in it.

DAVID BARGEN: So I mean, you're as confident as you can be that those extraction wells are taking care of it, that nothing is getting past them and that's all the research we have right now?

GARTH ANDERSON: Yes. In fact, just to raise our confidence, that's why we put this extra line of monitoring wells in just this year, so that we would have definitive data that shows that nothing is getting past the extraction wells.

DAVID BARGEN: And what is this one-mile buffer, the red line around there, what is that delineating?

GARTH ANDERSON: The one-mile buffer line is a -- you know, in conversations with the community we have a lot of -- we sample residential wells in the vicinity of the site, you know. And early on we only sampled ones that were very close to the plume or actually in the plume with some regularity. Well, to raise our confidence that we were being protective and that folks that lived in the area were not impacted by our contamination, we now sample residential wells within this one-mile buffer zone just for an added bit of surety on that. Those that are within a half a mile get sampled more frequently; those that are a little further out, a little less frequently, but at least annually for everyone within the one-mile buffer zone.

DAVID BARGEN: And so far no hits on the one-mile buffer zone?

GARTH ANDERSON: There have been no new hits since we instituted this. Those that we were already seeing contamination in continued that contamination, but we haven't seen any new residences come up hot with RDX or TCE.

DAVID BARGEN: In the past how many years?

GARTH ANDERSON: We started -- we're on our second -- we just finished our second full year of one-mile buffer zone.

DAVID BARGEN: Okay. Thank you.

GARTH ANDERSON: You're welcome.

MELISSA KONECKY: I had someone ask me why it is that some of the extraction wells won't work and, you know, a lot of money and time and everything was spent to, you know, construct them, you know, to clean the groundwater, whereas some people, you know, have had to have their water -- like a water purifier put in for their whole house.
And someone had asked, well, what is the difference, why are those working so effectively whereas the extraction wells aren't necessarily working very effectively.

GARTH ANDERSON: Well, you know, we're talking two completely different things. But I'll explain the extraction well one first.

The ones that have been in since the beginning are generally working as designed. We've told the story of EW11 up here which we found was actually in one of the hottest spots of the plume, and that's why we've chased the plume down a lot further south.

The well that's in question is EW13 that we installed last year. We designed it with two wells in mind to achieve full capture. We did all the standard testing and then we put in test holes to make sure that we were putting them in the right spot, and everything seemed to be right on target. Then when we actually installed EW13 and screened it and started pumping it, it just wasn't producing the volume of water that we intended. Fortunately, signs are that EW12 is doing better than we thought, and it's fairly promising that it will be capturing the whole plume. And we talked about the evaluation of the system that will be coming out this year. You know, sometimes geology isn't as nice as neat as you
hope it would be; you can move over ten feet and hit something completely unexpected. And that's what happened on EW13.

Now, to answer your question on the residential treatment systems, those are treatment systems that are put on existing water supply wells. These are above ground. We put that in, you know, the whole house, treatment systems; right at the well head; we sample the water before it goes through the treatment system to make sure we know
what's going into it, and then we sample what's coming out to make sure the treatment system is taking out all the contamination as designed.

Did I answer your question?

MELISSA KONECKY: I guess the extraction wells are a little more complex than -- and more difficult to -- there's more unknowns --

GARTH ANDERSON: Yeah. Extraction wells are big and deep, and you can't see under the ground necessarily, whereas at least with a treatment system that's above ground, you know, we can reach out and touch it, look at it, and have a good picture of what's going on.

MELISSA KONECKY: Thank you.

GARTH ANDERSON: You're welcome.

One of the other items that I promised, the letter to Senator Nelson, I've made copies and it's now at the back table for whoever would like one.

LYNN MOORER: Scott Marquess is going to tell us a little more about Dow and General Dynamics' results. I'm interested in that.

GARTH ANDERSON: Go ahead, Scott. The floor is yours.

SCOTT MARQUESS: Dow and General Dynamics, some of the operators of the facility,
operators, constructors of the facility back at time, are doing some work with potentially responsible parties to look at the TCE plume at Load Line 1. And I'm trying to see if I can find --

BRUCE HALEY: See where the Y is?

SCOTT MARQUESS: Here it is.

BRUCE HALEY: Down below there.

SCOTT MARQUESS: Right. Well, no, not that far. Here and up here.

Dow and General Dynamics are doing groundwater screening samples across the heart of the TCE plume to help look at the focused extraction component of the remedy. They have completed collecting samples in approximately this location (indicating) --

LYNN MOORER: Can you give us a number, a reference point? Could you site a number or something of a well?

SCOTT MARQUESS: North of MW21, south of MW2.

LYNN MOORER: Okay.

SCOTT MARQUESS: And they've taken I believe about 14 locations and have done screening analysis to look at the -- to determine the hottest areas of VOCs in the groundwater. They have taken samples to the lab for TCE analysis. We don't have the data yet. They have validated the data. They have described to me that the hottest detections of TCE are 15 to 20 parts per million. That was one sample in the center. And then also one sample about, oh, a couple hundred feet west of the center. It was actually from location GP93 that's described in a supplemental OU2 Groundwater Investigation Report. Right now this week they have moved further up north and are doing the same kind of work at a location north of MW2. And I can't really site it for you here very well. And I don't have any data to report from that yet. But they should be complete this spring and have reports complete with the data and then also be looking at potential pilot studies as to how to best address that kind of contamination which would address TCE contamination in hot spots that would be applicable here and on the western plume and then as well the TCE on the eastern plume.

LYNN MOORER: Could I ask how -- at what point in testing are you able to confirm presence of DNAPLS, dense nonaqueous phase liquids?

SCOTT MARQUESS: It's really pretty difficult, unless you put a rod down and you pull it up and you find the material dripping. So what you find are kind of lines of evidence. At this point I would say we're still in the gray area. It's not -- and it's pretty rare that it's

very definitive, that you say we actually have it. What you I think do is say, well, we have, you know, lines of evidence to suggest that we have it. And whether you have it or not, the important thing is, well, how are you going to manage it, are we going to act as though there's DNAPL here or are we going to act as though this is dissolved phase material. So -- which generally, I mean, you shouldn't much DNAPL -- I mean, you should be able to address the majority of this plume and the majority of this plume as dissolved phase, meaning that the focused extraction or some variations thereto would be successful, and then if you have DNAPL, then kind of all bets are off and you have a containment issue and then treatment becomes more difficult to clean up the aquifer where there's DNAPL.

LYNN MOORER: So is it fair to say usually, unless you're extremely lucky and pull up a
sample and have it dripping off the rod, that you extrapolate that you have DNAPLs based upon the levels that you're detecting?

SCOTT MARQUESS: Yeah, that's a fair statement.

GARTH ANDERSON: All right. What I'm going to do right now is enumerate the action items that we talked about this evening to make sure we're all on the same sheet of music here.

LYNN MOORER: Where is the plan? Excuse me. In this letter to Senator Nelson that you sent dated November 27, where is the plan, an enclosed plan?

GARTH ANDERSON: It was attached in the package to Senator Nelson.

LYNN MOORER: Where is it?

GARTH ANDERSON: That's the Containment Evaluation Work Plan which I passed out on CD earlier tonight.

LYNN MOORER: Oh, that's precisely the same thing?

GARTH ANDERSON: Yes.

LYNN MOORER: Okay. All right. Thank you.

GARTH ANDERSON: What you showed me was the Data Summary Report I think.

Did you grab two CDs? There should be one that's handwritten with Containment Evaluation Work Plan --

LYNN MOORER: This one?

GARTH ANDERSON: Yeah, that would be it.

Okay. Let's just go over the action items here.

Okay. In preparation for the RAB meetings, we'll get the slides out seven days ahead of time. And --

LYNN MOORER: At least.

GARTH ANDERSON: Ms. Konecky and I will confer from now until the next RAB meeting on what the agenda will be, along with the corresponding map to make sure the map is the one that we'll brief from at the meeting.

Okay. Next one, we will send a copy of the transcript and DVD of this meeting to NDEQ's office.

LYNN MOORER: Contemporaneously.

GARTH ANDERSON: That means at the same time?

LYNN MOORER: That's what it means.

GARTH ANDERSON: Okay. Bear with me while I go down the list here.

LYNN MOORER: And also provide the DVD with the transcript to the library in Mead also contemporaneously.

GARTH ANDERSON: Yes.

GARTH ANDERSON: Okay. Now, I will still -- when I get the hard copy of the -- or the Adobe version of the transcript, I will still e-mail it out and post it on the website, but then the actual hard copy of the transcript along with the DVD will go into the library and to DEQ.

Could we ask that before you -- as a part of your editing or finalizing the transcript, that you compare it to the DVD and note when things are inadvertently left out?

GARTH ANDERSON: Yes.

LYNN MOORER: I mean, just a bald review of the transcript compared to my own tapes of the meeting shows segments that are just plain left out. I'm sure they're inadvertent, but there's significant information that's missing all throughout the transcript.

GARTH ANDERSON: We'll compare them. Next, more detailed information on the Risk Assessment, specifically surface water and how we arrived at some of the numbers, more than just what was in our fact sheet, we'll have more detailed assumptions and calculations.

LYNN MOORER: I want the technical memo.

GARTH ANDERSON: We will take information from our Operable Unit 3 Risk Assessment which is where our assumptions and calculations are taken from.

Next item, the drawdown map that we flashed up here on the screen that we ran, Ms. Konecky asked if we could actually e-mail that to people, and we said yeah, we can do that.

LYNN MOORER: And snail mail.

GARTH ANDERSON: And snail mail. And bring bigger versions of it to the next meeting.

LYNN MOORER: And handouts.

GARTH ANDERSON: And handouts. LYNN MOORER: I mean, anybody who walks into the meeting should be able to have a handout version.

GARTH ANDERSON: Okay. And for those that want to take one tonight, we have a black and white version.

LYNN MOORER: Oh, black and white?

GARTH ANDERSON: Well, it's the best I can do right this second. I gave Ms. Konecky the color one to take with her. I know a lot of people like the big chief version. It's a little easier on the eyes.

Prepare a concentration map for Load Line 1 and -- Load Line 1 and 4 that shows more of
the gradation of the contamination out to non-detect.

Okay. We already did the letter to Senator Nelson. We passed that out to whoever wanted it.

Okay. The big action item on Operable Unit 3 is we're going to have a public availability session and public meeting that will cover both the removal action and the OE Recurring Review. And as a part of that, we're going to present more detailed information on where the soil samples were collected and where we took data for the antimony contamination and also provide some type of maps or photos to give a better picture of where these areas of interest are.

And then we were also asked what the antimony concentrations were and the cleanup levels were. That was Nancy Gaarder's question. We'll be able to provide that.

And I guess we have -- Ms. Konecky, you've got two action items here. Both are similar. Date on when we should have this public availability session/public meeting for OU3. And, of course, we'll have to figure out when the RAB meeting will be in April.

MELISSA KONECKY: I'll look at the -- Melissa Konecky.
I'll look at the school schedule and also the town schedule and get back to you whenever I can.

GARTH ANDERSON: Okay.

MELISSA KONECKY: It shouldn't be --

GARTH ANDERSON: Yeah, I think our meeting is either going to be on the 19th or the 26th. I'm talking about the April RAB now. Those are the Thursdays that we would have them. There's no law that says we have to have them on Thursday, but --

MELISSA KONECKY: The third Thursday is bad for me.

GARTH ANDERSON: Just let me know.

MELISSA KONECKY: Okay. All righty.

GARTH ANDERSON: If not a Thursday, if another day works better, that's fine too. And then a day in February when we can have this other meeting. And again, day of the week is not critical. Not a Friday though.

SCOTT MARQUESS: Or Saturday.

GARTH ANDERSON: Or Saturday or Sunday. But if you pick Saturday, we'll be here.

SCOTT MARQUESS: Some of us will.

GARTH ANDERSON: But if I come, you got to come too.

Okay. Did I miss any action items?

LYNN MOORER: I request that you, in addition to that then, once you get the transcript,
go back and read that carefully and pick up any other items that it contains that you don't have in your list. I mean, the transcript is the best -- and the tape are the best record.

GARTH ANDERSON: We do that. I go through --

LYNN MOORER: Well, you've missed so many so far that it makes me wonder whether you really pay attention.

GARTH ANDERSON: Okay. Any other questions before we call it a night?

We are always looking for future RAB topics. And again, we'll converse over the next -- you know, in the interim to make sure we establish what we want to talk about. But we'll do the standard things, the update of activities, what we've done since the last RAB. We'll talk about the sampling that we did in December. We'll have the results by then. So, but any other topics we're open to discussing.

Okay. Any agenda items that anybody else wants to see, please e-mail me or e-mail Ms. Konecky and we'll get it put on the agenda.

Okay. I see by everybody putting their coats on that we're declaring the end of the meeting. So thanks for coming and we'll see everybody next month and again in April.

(10:55 a.m. - conclusion of deposition.)